DOCUMENT RESUME

ED 029 495 EM 007 116

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How to with P.I.: A Systematic Approach to the Use of Programmed Instruction. Volume III, the Draper Project. Final Report.

Rehabilitation Research Foundation, Elmore, Ala. Draper Correction Center.

Spons Agency-Manpower Administration (DOL), Washington, D.C.; National Inst. of Mental Health (DHEW), Bethesda, Md.

Report No-NIMH-2-R11-MH00976; NIMH-5-R11-MH02529

Pub Date 68

Note-91p.

EDRS Price MF-$0.50 HC-$4.65

Descriptors-Achievement Tests, Case Records, Case Studies (Education), *Corrective Institutions, Counseling Goals, Delinquents, Diagnostic Tests, Goal Orientation, Individualized Instruction, *Institutionalized (Persons), *Institutional Research, *Instructional Programs, Learning Motivation, Manuals, Prisoners, *Programed Instruction, Programed Tutoring, Programs, Rehabilitation Counseling, Rehabilitation Programs, Reinforcers, Scoring, Testing, Transfer of Training

Draper Correctional Center successfully employed programed instruction in a dual project with 1800 youthful prisoners. Diagnostic testing and careful analysis of test results were used to discover individual needs, for which relevant sections of a program were then prescribed. The role of the teacher in this situation was that of learning-manager. It was his job to test, score, interpret, and course-prescribe. He had to listen, observe, answer questions, and constantly evaluate the programs. Since more than usual counseling was needed, the learning-manager served in this role in association with a psychological consultant. Problems included scarcity of programs for basic and remedial education, score interpretation, instructor selection, student boredom, cheating, and underestimation of number of instructors required. It was concluded that higher students' goals and motivation are achieved when instruction is geared to their preferences, in a pleasant atmosphere with respect for their dignity. It is believed that a similar undertaking will work in any educational setting. Two case summaries are presented in detail with scores, diagnoses, prescriptions, personal backgrounds, comments, and recommendations. (EM/MF)

ED029495

How to WITH P.I.

A Systematic Approach
To The Use Of
Programmed Instruction

THE DRAPER PROJECT

FINAL REPORT

Vol. III

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Volume III - Final Report

HOW TO WITH P.I.

A Systematic Approach to the Use of Programmed Instruction

Developed by

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under grants from

The National Institute of Mental Health
and under
The Manpower Development and Training Act
through the
U. S. Department of Health, Education, and Welfare
and the
U. S. Department of Labor

1968

EM007116

This manual was prepared under contracts with the National Institute of Mental Health and the Manpower Administration of the U. S. Departments of Health, Education and Welfare and Labor.* Organizations undertaking such projects under Government sponsorship are encouraged to express their own judgment freely. Therefore, points of view or opinions stated in this document do not necessarily represent the official position or policy of the contractual agencies.

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*NIMH Contract Nos. 2 R11 MH00976, 5 R11 MH02529 and 7 R01 MH14990
HEW Contract Nos. A1A(YM) 5001-000, A1A(M) 6068-000, and A1A(M) 7005-000
Labor Contract Nos. 82-01-07 and 82-01-67-36

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FOREWORD

During the past seven years, the Rehabilitation Research Foundation has used programmed instructional materials with some 1800 students. These students were the subjects in two experimental-demonstration projects in education which the Foundation has conducted at Draper Correctional Center, Elmore, Alabama.

The first project, funded by the National Institute of Mental Health, concerned itself initially with demonstrating that the academic achievement level of youthful prison inmates could be significantly raised by the use of programmed instruction. Later phases of the project were directed toward improving methods of using programmed instruction, with major emphasis being focused on methods of motivation.

The second was a manpower training project funded by the U. S. Departments of Health, Education, and Welfare and of Labor under provisions of the Manpower Development and Training Act of 1962. It had as its objective the development of a total training program for youthful prison inmates. As an experimental and demonstration project, its commitment was to develop and try out a combination of services and training which would prepare its subjects for employment and equip them with personal-social and educational skills which would help them to remain free and employed upon parole or completion of their sentences. Programmed instruction was part of the learning system used in all of this project's training phases--basic and/or remedial education, vocational training, and personal-social development.

Because they were experimental and demonstrational in nature, the projects have had countless visitors and correspondents through the years. The questions which these people have asked about programmed instruction and our method of using it have provided the framework for this manual.

ORGANIZATION AND TERMINOLOGY

There has been an effort to keep the "how to" sections of the manual as explicit and as free of verbiage as possible. This approach tends to make these sections sound dogmatic, and that is certainly not the intent. The intent was to make the manual as useful as possible. Since this approach may also leave the reader with the feeling that something is lacking, the entire "how to" section is prefaced with an overview in which there is some discussion of the questions which we have been asked most often, and each chapter is introduced with some general comment.

Programmed instruction does not free the teacher from the task of painstaking planning and thoroughgoing preparation before classes begin. In planning the manual, we have, therefore, tried to place ourselves in the position of a teacher who is going to use programmed instruction for the first time. Thus, the first two "how to" chapters deal with some of the decisions which must be made in advance. The next two chapters deal with the on-going instructional program. Chapter VI deals with evaluating programmed instruction. The remaining chapters are devoted to aspects which should be considered by the administrative as well as the instructional staff. The latter chapters are not "how to," but are reflective and suggestive in nature and in intent.

Terminology

We have tried to avoid technical jargon in the manual, but some of the terms we use require or deserve explanation here and now. If others are used, they are defined as they are introduced.

Throughout the manual there is reference to grade levels, a term used in the interest of brevity. As used herein, it means grade placement score obtained on a standardized achievement test.

The terms diagnosis and prescription are also used throughout the manual. These terms are borrowed from the medical profession because they aptly describe processes which we consider basic to the effective use of programmed instruction.

In the "how to" sections we refer to the instructor or teacher as the learning manager or manager. This title is used to distinguish his role from the traditional one, inasmuch as instruction is the function of the programmed materials.

CHAPTER I

OVERVIEW

What is programmed instruction?

We have never been able to phrase or to find a completely satisfactory definition of programmed instruction (P.I.). It is probable that no two programmers (writers) or users of P.I. would agree on a definition. Most would, however, agree that it has the following characteristics:

1. Its training objectives are behavioral; that is, the learner will be able to do something specific.

2. Material is presented to the learner in a logical sequence in which concepts and/or behaviors are broken down into steps which are small enough to be easily learned.

3. The student is required to respond actively to each step. That is, he is asked to apply information or perform skills immediately after they are introduced. If his responses do not require him to perform precisely the kind of behavior we are trying to teach him, they require that he approximate the behavior. When the response cannot be elicited in a real-life situation, such a situation is simulated.

4. The learner receives immediate feedback to each response--he knows at once that he is right or wrong. If he is wrong he is told why. In good P.I. he is almost always right. This characteristic explains the behavior-shaping power of P.I. The knowledge that a response is right is reinforcing to the student: When he encounters similar situations in the future he will be apt to make the same response.

5. Most definitions of P.I. will state that it is self-pacing; that is, students will learn at their own rate. Programs designed for use on an individual basis do have this characteristic, and it is a very important one. Indeed, it is this characteristic which makes a system such as we describe work. There are, however, programs for use by small groups of students whose skills and knowledge in a particular area are at about the same level. We use one such program at Draper to improve reading skills.

Why use P.I.?

We do not advocate the use of P.I. to the exclusion of all other methods of teaching. Because it enables us to individualize instruction for each student in a group which is characterized by the marked differences among its members, we do advocate that it be used as the core of a learning system which utilizes a variety of instructional methods.

We have not yet found another method which gives us the same results: Our students, after 200 hours of P.I., have consistently shown an average grade level gain of 1.4. When we coupled this instruction with a programmed reading improvement course, the gain was about 2.5. The highest individual gain has been 4.5. Out of 159 men who took the GED tests for a certificate of high school equivalency after completing our courses, 151 have passed. (Some of these students had more than 200 hours of instruction.)

What do programs look like?

An oral lesson can be programmed. Good teachers have always used the method, whether consciously or unconsciously. The kinds of programs we are talking about here, however, come either as paper texts or in a form for use in a teaching machine.

Upon cursory inspection, the pencil and paper variety look very much like workbooks. The student makes his responses either directly in the text or on separate sheets of paper. There, the similarity to workbooks ends. The program is very different from a workbook in design and intent.

Teaching machines come in different forms. Some are no more than page turners while others are sophisticated machines. The most sophisticated is the computer which is coming into increasing use in training programs in business and industry as well as in schools.

It is the programs used _in_ the machines that determine whether a machine has value. There are some machines, however, which, available programs aside, have desirable capabilities. These machines are expensive, but, in some cases, the expense may be offset by the capabilities. For instance a student can automatically be skipped over material which his responses indicate that he already knows. He can be "branched" to extra practice sequences for review, for further explanation of difficult material, or for strengthening of partially acquired learning. Some machines can tally correct and incorrect responses, a particularly desirable feature for research projects. They can test the learner, and they can control cheating.

Where can I get P.I. materials?

One of the problems we faced at the beginning of our projects was the scarcity of commercially available programs for basic and remedial education. Those which were obtainable frequently lacked data for evaluative purposes. Many programs were not accompanied by appropriate tests, and we had to devise our own. It was often difficult to assign material to meet the specific needs of our students.

As our projects developed, P.I., fortunately, "came of age." More and better programs, complete with necessary data and tests, became available. P.I. in many subject areas can now be purchased off the shelf. There are, however, few programs to teach the total illiterate, and little is available in vocational skill training and in personal-social areas.

The problem has now become one of evaluation and selection. This process, which is treated in Chapter VI, begins with one or more of the bibliographies which have also become commercially available.

How does one select effective materials for an individual?

The marked individual differences among our trainees not only underscored their need for the individualized instruction which P.I. could provide, but also provided the clues which guide us in selecting materials for each student. Chapter IV describes our method of determining individual deficiencies.

We learned quickly that scores on standardized achievement tests are not definitive. Sub-test results have to be analyzed and categorized within specific subject matter areas. For example, suppose a trainee obtains a grade placement score of 6.5 on the arithmetic sub-test of an achievement test. An analysis of his wrong answers might show us that his errors are concentrated among problems involving decimal fractions. After administration of a diagnostic test, a study of his work papers on the test might reveal that he does not know the difference in a divisor and a dividend, and that he does not know where to put the decimal point in answers to multiplication and division problems. We could then prescribe a portion of a program which would rememdy the specific deficiencies thus uncovered.

If P.I. does the teaching, what does the teacher do?

When we began our projects we believed that P.I. would permit us to employ fewer teachers. We now know that an educational program which leans heavily on P.I. to provide an individualized learning system may require more, not fewer instructional personnel.

The teacher whose students are using P.I. does not have the same role as the teacher who is using conventional instructional methods. He has more than one role, and his work is not lessened as some people seem to believe. He may even work harder than ever before, but his work may be more effective and rewarding than ever before. The role of the teacher who uses P.I. is described in Appendix A.

It has been our experience that the conventionally trained teacher sometimes finds it difficult to vacate his position as an imparter of knowledge to become, himself, a perennial learner who manages the learning process for others. Pre-service and inservice preparation of instructors who are to use P.I. is as important as their previous educational background and experience. In selecting instructors, we came to be more concerned with evidence of their flexibility, creativity, and supervisory capability than with their formal teacher training.

We have found that not all members of the instructional staff using P.I. need have degrees. In our projects, college students have been trained successfully to assist with the diagnostic and perscriptive process and the management of learning behavior. We have also trained inmates (former students) to function as aides in the program. In spite of the foregoing, we do recommend that the testing program be administered and/or supervised by a teacher or counselor who has had training and experience in testing. This person should be responsible for making final selection of whatever standardized tests are to be used.

Will students using P.I. maintain an acceptable level of performance?

Motivation of students is a major problem in the use of P.I., just as it is with other instructional methods. Although P.I. has an intrinsic motivating capacity, that capacity probably loses some of its power and will not, of itself, sustain the performance rate which is necessary for substantial educational achievement.

As might be expected, our students got bored with a steady diet of P.I. after a few weeks. The novelty of the method and the excitement of success wore off or lost their edge, and motivational problems developed. Some of the ways in which we were able to create a positive, reinforcing atmosphere for learning and some specific methods of motivation to which P.I. lends itself are discussed in Chapter VIII.

How can the effectiveness of P.I. be measured?

We can only answer this question by asking others: How well can the effectiveness of any instructional technique be measured? How can the effectiveness of a method be separated from the effect of the whole learning system--the equipment, procedures, facilities, program schedules, maintenance, texts, materials and personnel which are involved in the learning process?.

Trainee progress within a given course and the extent to which P.I. materials contributed to this progress can be measured with tests. Our method of testing enables us to state student gain in terms of grade placement scores on standardized achievement tests. To this extent, we can and do measure the effectiveness of P.I. (See Chapter V.)

This answer seems to beg the question. The real test of effectiveness is: Does the student apply what he has learned to a real life situation? For example, does he apply the knowledge and skills he has learned in punctuation to writing letters, or in math to filling out his income tax form? In this context, P.I. offers nothing better than other instructional methods. The fact is, transfer, or carry over, or generalization follow specific principles of learning which state simply that generalization must be taught. And if generalization is an objective of the program, then it can be evaluated. The first step would be to examine material to see if such generalization has been included; the second step is to observe the transfer of learning to practical and real life situations.

Conclusion

The manual describes and recommends to you an efficient and effective instructional program which has programmed instruction as its core. Although our students are prison inmates, and our experience has thus been gained in a special setting, we believe a similar program will work well in any educational setting.

You should be cautioned that, in terms of money, such a program is expensive. Management and supervision--analysis of individual deficiencies, precise prescription to remedy the deficiencies, provision of feedback through counseling, the continuous search for reinforcers--require competent personnel who will themselves probably need pre-service and continuous inservice training. Furthermore, it is necessary to purchase or develop a wide variety of programmed materials on varying levels of difficulty.

We have found the system to be well worth its cost. For us, it has been a marked improvement over traditional instructional methods because it has succeeded with a population for whom older methods have failed.

Programmed instruction can, of course, be used very effectively as an auxiliary method of instruction. With it, an educational program can provide basic, remedial, correlated, incidental, enrichment or substitute instruction while still placing major reliance on other methods. Much of what is recommended in this manual is applicable to the use of P.I. in such situations.

CHAPTER II

THE RECORDS

Record keeping is, of course, an integral part of the on-going educational program. It is discussed at this point because your advance planning and preparation will have to include decisions concerning the records you will keep and the forms you will use, as well as the arrangements to have the forms printed.

The kinds of records you keep will naturally be governed by the use you plan to make of them and the requirements of the system in which you teach. You will certainly want a permanent, cumulative record of student progress which can be used in planning future programs for each student.

Kinds of Records

The records which are discussed below are those which we have found useful. Copies of each are included at the end of this chapter. Whether you decide to adapt these forms or design your own, the forms should be ready before your classes begin. Experience will dictate whether you need to revise, eliminate, or add records.

1. Cumulative Record Sheet - This form should include space for:
    - A. Pre and Post Achievement Test Scores, by subtest as well as overall scores
    - B. A record, by date, of programs assigned, completed or dropped (reason for dropping should be noted)
    - C. Final grade on each course completed.
2. Student Test Record - A record of unit and final tests on each course taken. It includes grades (unit and final), dates tests were taken, and form of the test used.

3. Student's Weekly Activity Sheet - A record, kept on a daily basis, of the number of frames completed, number of tests passed and failed, time spent in actual study, etc. (This form may have to be adapted to fit a particular program.)

4. Charts and Graphs - On the face of it, one good measure of a student's progress is the number of frames completed. If the number of frames completed is charted or graphed so that a student can watch and compete with his own output, such records may be helpful. If, however, they are to be publicly displayed, there are some points which should be considered: The charts may cause students to compete with each other in quantity of frames completed at the expense of quality (number of correct responses). Programs cannot be validly compared this way. To begin with, they are on different levels of difficulty. Most vary in the number of responses required. Some will have three or four problems in a single frame; some will not even require an overt response. Others will enable a student to skip many frames if he responds correctly to one.

In the records, there should be space provided for recording staff comment. Information gained from interviews, counseling sessions, and casual conversations is of great value in managing the student's learning.

Summary

Each school or project will need to decide in advance what records will be kept. The decision will be based on the use to be made of the records. Forms should be printed before classes begin. Revisions may be necessary after classes begin.

CUMULATIVE RECORD

Name ______________________________ Date Enrolled ____________________

Achievement Test Results

Name Of Test	Date Taken	RV	RC	MR	MF	ME	SP	Grade Level Total Battery

Courses	Date Assigned	Date Completed	Final Grade	Times Taken	Date And Reason Dropped
English					
Math					
Science					
Social Studies					
Electives					

Comments:

STUDENT TEST RECORD

NAME ______________________________ STATUS ______________________________

COURSE ______________________________ DATE ASSIGNED ______________________________

UNIT	ENDING FRAME	DATE TESTED	TEST SCORE	REMARKS (AT LEAST WEEKLY)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
FINAL				

WEEKLY ACTIVITY SHEET

Name Week Ending Status

			Frames Per Day						Tests Taken And Grade							Unit Tests
Courses	Date Began	Beginning Frame	M	T	W	T	F	Total	Unit	Final	M	T	W	T	F	Passed
																Failed
																Average
																Final Tests
																Passed
																Failed
																Average

Other Activities		M	T	W	T	F
Book Now Reading	Time Per Day					
Book Report (Title)	Grade And Day Given					
Seminar Attending	Days Attending					
Reading Lab (Total Time Spent)	Days Attending					

Miscellaneous Activities (List)	College Corpsmen Comments:
Time	
Time	

CHAPTER III

SELECTING A STANDARDIZED ACHIEVEMENT TEST

The assignment (prescription) of P.I. on an individual basis requires that you determine exactly what each student needs to learn (diagnosis). The first step in diagnosing individual training needs (deficiencies) is the administration of a standardized achievement test. Your school or project may already be using a test which will be adequate for your purposes. You may, however, want to consider using a different instrument to eliminate the possibility that student familiarity with the test will color the results. If a test is not already available, you will need to select one before your classes begin.

Sources

Standardized achievement tests are available from several publishers, some of whom are listed below with the names of their tests. When you write to the publishers to request sample copies of the tests, explain how you plan to use them and ask that they also send any information which may help you to make a selection.

The State Department of Education may be able to furnish you with the names of other publishers and with information about the various tests.

Publishers

Harcourt, Brace and World, Inc.

- The Stanford Achievement Test (SAT)
- The Metropolitan Achievement Test (MAT)
- Adult Basic Learning Examination (ABLE)

California Test Bureau

- The California Achievement Test (CAT)
- Tests of Adult Basic Education

Follett Publishing Company

- The Adult Basic Education Student Survey (ABE)

Reviewing the Tests

The manager reviews the tests in the light of the characteristics of his prospective students and the qualifications of staff members who will administer the test. The student characteristics which are particularly important here are age and grade completed in public school. An adult who did not finish elementary school should not be required to take a test designed primarily for a child of elementary school age. In other words, the test should be designed for the population to which it is administered.

It is mandatory that the test you select have certain features; others are highly desirable, but their absence will not prevent your use of a test which otherwise seems to be appropriate.

The Mandatory Features

1. Instructor's Manual - The directions for administering the test should be explicit.
2. Normative Data - These data should include grade placement scores based on national and local norms. It should describe the population on whom the norms were established. (If the data do not include grade placement norms, you may be able to obtain them from the publisher.)
3. Different Levels - There should be separate tests for elementary and secondary school students, for children and adults.
4. Alternate Forms - You will use one form as a pretest and another as a posttest.

Desirable Features

1. Ease of Administration - Instructions, timing, tools, and conditions for testing should not be so complicated that they break the frustration level of the students being tested.
2. Ease of Scoring - Most tests can be machine or hand scored. If the test is to be hand scored, you should be able to do so rapidly, objectively, and inexpensively.
3. Item Analysis - If an item analysis is not furnished with the test you select, staff members will have to prepare one. The use of the item analysis is explained later.

4. Reasonable Cost - When considering cost, remember that most test booklets can be used many times if separate answer sheets are purchased.

If the test you select does not provide a measure of the student's reading level, you should plan to administer a separate test to obtain this measurement.

CHAPTER IV

DIAGNOSIS AND PRESCRIPTION

Diagnosis is the process of determining the specific subject matter areas in which a student's knowledge and behavior is deficient. It further involves the determination of his educational goals so that both manager and student will know what level of education the latter must attain in order to reach these goals.

Prescription is the process of selecting for the student those educational materials and experiences which will eliminate his deficiencies and advance him toward his goals.

A large part of the diagnostic process is accomplished through the administration and interpretation of achievement and diagnostic tests and vocational and personal preference inventories. But interaction with the manager is of equal importance. Through counseling interviews as well as day-to-day contact, the manager must establish a good relationship with each student. During the process he will gain information about a student's goals, attitudes, and general background which will guide him in prescribing and managing a student's learning activity.

This chapter is concerned with the use of tests in diagnosing learning deficiencies and prescribing materials to overcome them. We ask, however, that you keep in mind that the purpose is the development of a program, not for an assortment of knowledge gaps, but for a human being whose success in learning will in large measure be determined by the acceptance and support of the learning manager. (Counseling, motivation, and the teacher's role are discussed more fully in later chapters.)

The identification of knowledge gaps begins with the administration of the standardized achievement test which is selected before classes begin.

Preparing to Administer the Test

1. Study the manual - All staff members who are to assist in administering the test should have a copy of the manual and a copy of the test. Before the test is given, each should familiarize himself with the procedures stated in the former.

2. Instruct each staff member in duties he will be expected to fulfill during the test. If the test is to be timed, it is recommended that one staff member be given no other responsibility than keeping time.

3. If an item analysis is not furnished with the test, prepare one, and have a supply printed. You will need at least one copy for each student.

4. Schedule the students to be tested. Be sure that each knows the time and place the test is to be given.

5. Arrange for facilities and supplies.

   A. The test should be given in a well-lighted, well-ventilated area in which students will not be crowded. There should be a desk or carrel for each. If tables are to be used, students should not be seated shoulder to shoulder. They should not be able to see each other's answer sheets, and each should be in full view of the proctors.

   B. Take the following to the test area:

      Test booklets and answer sheets for each student

      Soft lead pencils or the special pencils required for some machine-graded tests - you will probably need at least two for each student unless a pencil sharpener is in the test area

      "Scratch paper" - for students to use while doing arithmetic sections of most tests

      Stop watch or time clock if test is to be timed

Administering the Test

The attitudes and manner of the examiners have a bearing on how well students perform on a test. Examiners should attempt to put the student at ease. Instructions should be given carefully and patiently and questions should be answered matter-of-factly with no hint of scorn or impatience.

After all students are seated, explain the purpose of the test. Tell them the test will not be "passed" or "failed," but will help you to select the courses each will study. Encourage them to follow instructions and to work carefully. If the test is to be timed, ask them not to race the clock but to work carefully and steadily. If some questions consume too much time, advise that they leave them and go on to others. After completing other questions, come back to the difficult ones. The number of correct responses is what counts, not how many questions they attempt to answer.

As you pass out test booklets, answer sheets, and other supplies, ask that they not begin working until you give the signal. This is important whether the test is timed or not. You need to review the instructions with them before they start work.

Reviewing the Instructions. Instructions for completing the test are printed in each test booklet. Ask the students to read silently along with you as you read the instructions aloud. Answer any questions they may have. Demonstrate the method of marking answers.

State any rules which may be in effect, such as under what conditions, if any, they may leave the test area while the test is in progress. If the test is timed, tell them what the signal to stop work will be. Remind them that no marks are to be made after time is called.

Announce that while the test is in progress you will answer questions about instructions, but not about content.

Ask the students to complete required identification data on the answer sheets, then give the signal to begin.

Monitoring the Test

Observe each student periodically to see that he is following instructions. Answer any questions about directions. Time each segment of the test as specified in the manual. At the end of the testing period, ask students to erase stray marks on the answer sheet. Collect answer sheets and test booklets.

Scoring and Interpretation of the Test

The manual will give instructions for scoring the test. They should be followed implicitly. We do, however, have two recommendations:

1. Have two persons, working independently, score each test to lessen the possibility of scoring error.
2. Mark each wrong answer with a colored pencil. (These marks will help when you begin to analyze the test results.)

Following directions given in the manual, convert raw scores to grade placement scores and record (sub-test scores as well as overall score) on the cumulative record. If the test does not provide information about reading level, a separate test which does give this information must be administered and scored. You are then ready to begin individual diagnosis.

Individual Diagnosis

Individual diagnosis begins with analysis of the achievement test scores. For each student, prepare a copy of the item analysis by posting his name and sub-test scores at the top and circling the numbers of all test items he missed. A sample is shown below.

Capitalization

Test Items	
1,3,6,15,16,20,23	Proper vs common nouns
④,⑤,⑦	Title of persons
13,⑭	Titles of places or things
23	Words in reference to Diety

As the sample shows, this procedure will identify the specific areas of a subject matter in which the student has a deficiency.

The analysis prepared for this student indicates that his knowledge about capitalization is not totally deficient but rather that the deficiency is in the area of capitalization of titles. Rather than prescribe an entire program (or section of a program) on capitalization, the manager might prescribe only that portion which deals specifically with capitalization of titles.

More often than not, there will be situations in which prescribing is not as "cut and dried" as the example used. Suppose that a student misses one or two of six items in a category? A determination must be made as to whether the errors represent deficiency or simply carelessness on the part of the student. What this means is that anylysis of the test scores only provides a gross diagnosis which must be further refined.

Refining the Diagnosis

The refinement procedure involves diagnostic testing which is done with a particular programmed course in mind. That is, the manager is considering a specific program for a specific student. This, of course, means that the manager must be familiar with available P/I courses. He should know

1. Course content - the scope of the material covered in a particular program
2. Grade level and reading level of the program
3. Method of presentation - format, length, etc.

(Recommendations on evaluation and selection of programmed instruction are contained in Chapter VI.)

Specific Diagnostic Tests

The diagnostic test for a particular course may be either the pre- or posttest for that particular program or it may be constructed by the manager. In deciding which to use, the manager will consider whether each concept, theory, or operation treated in the course has actually been evaluated by the test. The inclusion of only one test item dealing with a particular operation will not adequately determine whether a student has mastered that operation. He could have made a careless mistake. Mastery of each operation, concept, etc., should be evaluated by several items in the test.

Administering the Diagnostic Test

Before the student takes the diagnostic test (pretest), he should be given an explanation of why he is taking it. He needs to understand that the whole diagnostic process is necessary if his course of study is going to include only those things which he does not already know and only those things which relate to his goals.

Be prepared to score and analyze the test as soon as the student completes it. A delay may result in the student's loss of interest. Since this test is for diagnostic purposes only, it is unnecessary even inadvisable to assign a numerical or letter grade to the test. A low grade might discourage the student; yet a fairly good grade may make him less attentive to studying the material which will be presribed.

Analyzing Pretest Results

The pretest was given because a student is known to be deficient in a particular subject matter area. Analysis of the results of the pretest further isolates these deficiencies.

To analyze the pretest results, the manager must have a descriptive breakdown (item analysis) of the test items so that he may determine which test items correspond to specific sections within the course. For example, suppose a student's standard achievement test results point to a weakness in fractions. On the fractions pretest, he misses all five items under Question 12 but all other answers are correct. The manager will need to know that Question 12 deals with division of fractions. The indication is that the student needs only that part of the program which teaches division of fractions.

The manager should also be aware that a single question may test more than one operation or concept. This is particularly true in arithmetic. For example, if a student misses test questions on long division, the manager might talk with the student and examine his working papers to determine if the deficiency is in subtraction, multiplication, or estimation, or if it is actually the process of long division.

What you have learned about the student from his achievement test scores and diagnostic test scores must now be considered in terms of his academic or vocational goals to establish priorities for treatment and to prescribe the programmed materials with which he will begin his studies.

Prescription

The manager now prepares a prescription schedule for each of his students. The schedule is a record of the courses to be assigned, and the order in which the student will take them. To prepare it, the manager must consider the information he has gained during the diagnostic process. This information will include

> Achievement test results - overall and subtest scores, including a measure of the level at which the student reads

The item analysis

Diagnostic Test results

Information gained during interviews - the student's goals and attitudes

The manager will, after having selected and ordered P.I. materials for his students, be familiar with the materials in terms of

Behavioral objectives

Grade level

Reading level

Appropriateness for age level

Format (method of presentation)

Keeping in mind the age and approximate grade level of the student plus the information and insight he has gained as to the student's abilities and interests, he weighs course objectives against deficiencies and selects a course (or courses) with which the student will begin. Particular care should be taken to assure that the material selected is presented in a manner which is appropriate for the student's age. A program which does a good teaching job with children may offend adults.

The manager should remember at this point that the prescription is tentative and may have to be revised at intervals. It is a guide, not a formula.

Case Summaries

With the permission of the California Youth Authority[1] and the Research and Development Department of the California Test Bureau,[2] the following case summaries are included to illustrate some of the difficulties in preparing preliminary prescriptions. It should be pointed out that prescriptions were prepared without benefit of personal interviews with the two students. Although the social, educational, religious and group living evaluations gave our staff some insight into the personality makeup of the students, by and large the prescriptions had to be made solely for the purpose of correcting academic deficiencies. Our staff worked from the overview of students' deficiencies (illustrated on the Diagnostic Profile Sheets) and the breakdown of these deficiencies (shown on the Diagnostic Analysis of Learning Deficiencies Sheets) to prepare the Preliminary Prescription Sheets.

---

[1] Trumbull W. Kelly, Education Program Supervisor, Department of the Youth Authority, 401 State Office Building #1, Sacremento, California 95814

[2] Mrs. Demarest, Research and Development Department, California Test Bureau, Del Monte Research Park, Monterey, California 93940

FOR USE WITH 1963 NORMS

California Achievement Tests

Junior High Level • GRADES 7-8-9 • Form ☐

DIAGNOSTIC PROFILE SHEET

DEVISED BY ERNEST W. TIEGS AND WILLIS W. CLARK

Name f Case 1 (Last, First, Middle)

School City

[✓ M] F (Circle one) Grade

Teacher or Examiner

Date of Test 4 - 24 - 68 (Year, Month, Day)

Date of Birth 51 - 1 - 25 (Year, Month, Day)

Student's Age 17 3 ( ) (Years, Months, Total Mos)

READING

	1. READING VOCABULARY: A. Mathematics	B. Science	C. Social Science	D. General	TOTAL (A + B + C + D)	2. READING COMPREHENSION: E. Following Directions	F. Reference Skills	G. Interpretations	TOTAL (E + F + G)	TOTAL READING
Grade Placement					4.5				5.5	4.8
*AAGP										
Other Scores†										
Raw Score	4	0	9	3	16	6	10	10	26	42
Possible Score	15	15	15	15	60	15	26	45	86	146

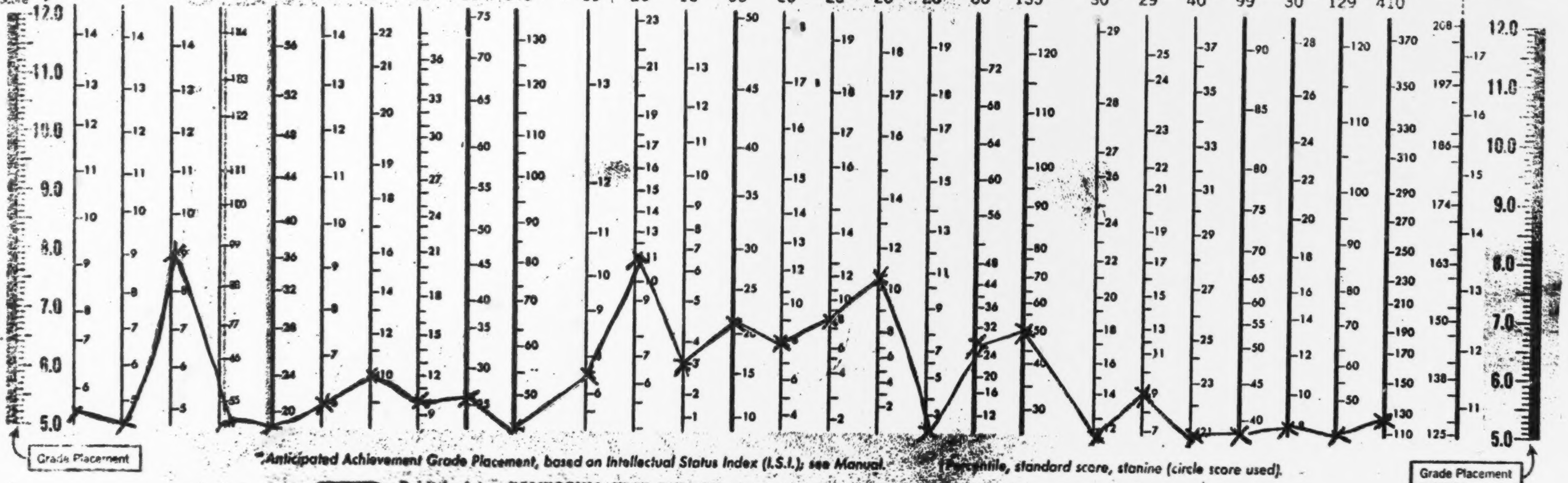
ARITHMETIC

	3. ARITHMETIC REASONING: A. Meanings	B. Symbols, Rules, & Equations	C. Problems	TOTAL (A + B + C)	4. ARITHMETIC FUNDAMENTALS: D. Addition	E. Subtraction	F. Multiplication	G. Division	TOTAL (D + E + F + G)	TOTAL ARITHMETIC
Grade Placement				6.7					6.6	6.7
*AAGP										
Other Scores†										
Raw Score	7	11	3	21	8	8	11	2	29	50
Possible Score	15	25	15	55	20	20	20	20	80	135

LANGUAGE

	5. MECHANICS OF ENGLISH: A. Capitalization	B. Punctuation	C. Word Usage	TOTAL (A + B + C)	6. SPELLING: TOTAL SPELLING	TOTAL LANGUAGE	TOTAL BATTERY
Grade Placement				3.2	5.3	4.2	5.4
*AAGP							
Other Scores†							
Raw Score	6	9	14	29	8	37	129
Possible Score	30	29	40	99	30	129	410

AGP	
ISI	
GCA	
CA	



*Anticipated Achievement Grade Placement, based on Intellectual Status Index (I.S.I.); see Manual. †Percentile, standard score, stanine (circle score used).

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Case 1

[illegible] Basic vocabulary

B. [illegible]

16-30 ...... Basic vocabulary

C. SOCIAL SCIENCE

31-45 .... Basic vocabulary

D. GENERAL

46-60 .... Basic vocabulary

2. Reading Comprehension

E. FOLLOWING DIRECTIONS

61, 62, 64, 68 . Simple choice
63, 65, 66, 67, 89, 70, 71, 73 .. Definitions and directions
72, 75 .... Math. directions
74 .... Map direction

F. REFERENCE SKILLS

76, 77 78, 79 .. Parts of book or newspaper
80 .... Use of dictionary
81, 82, 83 ... Use of index
84, 85, 86 ... Table of contents
87, 88, 89, 90 . Reading a graph
91, 92 ..... Library classifications
93, 94, 95, 96 . Selecting references
97, 98, 99, 100, 101 .. Reading a map

G. INTERPRETATION OF MATERIAL

102, 104, 105, 107, 111, 112, 113, 115, 117, 119, 120, 126, 127, 128, 129, 130 .. Directly stated facts
103, 106, 108, 109, 110, 116, 118, 121, 122, 123, 124, 125, 131, 132, 133, 134, 135, 136, 137, 138 .. Inferences
114 .... Topic or central idea
139, 140, 141, 142 .. Organization of topics
143, 144, 145, 146 .. Sequence of events

3. Arithmetic Reasoning

A. MEANINGS

1, 2, 3, 4, 5 Writing numbers
6 .... Writing money
7 .... Writing per cent
8, 9, 10 .. Roman numerals
11 .... Whole numbers
12, 13, 14 Fractions and decimals
15 .... Exponents

B. SYMBOLS, RULES, & EQUATIONS

16, 17, 21, 22, 23, 24, 25 .. Symbols
[illegible] .. [illegible]
[illegible] .. Negative numbers
36, 37, 38, 39, 40 .. Solving equations

C. PROBLEMS

41, 42, 43 ... Two-step
42, 43 ...... Sharing and averaging
44, 45, 48, 53 . Square and cubic measure
46 .... Ratio
49, 50, 51, 52 . Percentage
47, 54, 55 ... Commission and discount

4. Arithmetic Fundamentals

D. ADDITION

56, 57 .... Simple combinations
58, 59, 60, 61 . Carrying
57, 60, 62 ... Zeros
59, 60, 61 ... Column addition
61, 62 ...... Adding money
63 .... Adding numerators
64, 66, 67, 68, 69 . Common denominators
65, 66, 67, 68, 69 .. Mixed numbers
70, 71 ...... Fractions and decimals
72, 73 ...... Writing decimals
74 .... Adding percentages
75 .... Denominate numbers

E. SUBTRACTION

76, 77 ...... Simple combinations
78, 79, 80, 81, 82 .. Borrowing
77, 79, 80 .. Zeros
81, 82 ...... Subtracting money
83, 84 ...... Subtracting numerators
85, 86 ...... Common denominators
87 .... Whole from mixed numbers
88, 89 ...... Borrowing, mixed numbers
90, 91 ...... Fractions and decimals
92, 93 ...... Writing decimals
94 .... Fractional parts
95 .... Denominate numbers

F. MULTIPLICATION

96, 97, 98, 99, 100, 101, 102 .. Tables
97, 98, 101 .. Zeros in multiplicand
100, 101, 102 . Zeros in multiplier
99, 100, 101 .. Two-place multipliers
103, 105, 106 . Cancellation, fractions
104 .... Mult. num. and denominator
[illegible] .. [illegible]
111 .. [illegible]
112, 113 .... Pointing off decimals
114 .... Per cent of number
115 .... Denominate numbers

G. DIVISION

5

116, 117, 118, 119, 120, 121, 122 ... Tables
117, 119, 120, 121 .. Zeros in quotient
122 .... Remainders
123, 124, 125, 126, 127, 128, 129, 130 .. Inverting divisors
128, 129, 130 . Mixed numbers
131 .... Fractions to decimals
132, 133, 134 . Pointing off decimals
135 .... Fractional parts

5. Mechanics of English

A. CAPITALIZATION

2 .... Title of book
3, 5, 8, 23 .. Names of persons
6, 7, 26 .... Titles of persons
9, 16, 17, 21, 22, 24 .. Names of places
10, 19 ..... Pronoun "I"
1, 11, 27, 28 . First words of sentences
12, 28 ...... Days
13, 18, 30 .. First words of quotations
18 .... Special day
4, 14, 20, 29 . Over-capitalization

B. PUNCTUATION

31, 32, 37, 38, 40, 42, 47, 48, 51, 53, 54, 56 .. Commas
33, 34, 39, 46 Apostrophes
36, 43, 45, 52, 57 .. Question marks
41, 50, 59 .. Quotation marks
49 .... Quotation within quot.
35, 44, 55, 58 Over-punctuation

C. WORD USAGE

60, 64, 65, 67, 69, 77, 81, 85 .. Good usage
61, 66, 70, 76, 87 .. Tense
62, 68, 71, 74, 78, 80, 84 .. Parts of speech
63, 73, 79, 82 . Number
72, 75, 83, 86 . Case
88-99 ...... Recognizing sentences

6. Spelling (100-129) See profile

* Consult Part 2 of the Manual for uses.

PRELIMINARY PRESCRIPTION

(Sample form)

Name: Case 1

Grade Level: 5.4

READING		ARITHMETIC		LANGUAGE	
Reading Vocabulary	Reading Comprehension	Arithmetic Reasoning	Arithmetic Fundamentals	Mechanics of English	Spelling
4.5	5.5	6.7	6.6	3.2	5.3

Contradictory scores on various tests and subtests leave one altogether uncertain as to the actual achievement level of this student. For example, in one category on the CAT he scored as high as 8.0 while in others he didn't place. Conflicting, too, are his arithmetic grade placement scores of 2.3 on the Wide Range Achievement Test and 6.7 on the CAT. On the Gates Reading Survey he achieved a reading vocabulary placement of 9.6 and a level of comprehension placement of 10.0, while his CAT grade-placement scores in the same categories were 4.5 and 5.5 respectively. Actually, should probably have been administered the CAT elementary form for grades 4,5,6.

We also have evidence, if we consider his non-verbal score, that his I.Q. is within the normal range. Since no verbal score was recorded, here again one cannot be sure of his total intellectual functioning.

The first recommendation is that be retested with the lower level CAT and receive whatever individualized testing is deemed necessary to arrive at an accurate assessment of his academic achievement. Test results should be validated against a careful interview appraisal. For example, vocabulary usage, language structure, organization of thought, social insight, and judgement should be noted in such an interview and weighed against achievement and intelligence test scores, especially those that are low.

The over-riding problem may be his lack of facility with the English language. Since we have attempted a blind diagnosis, having merely noted his Spanish language heritage, we cannot rule out, without additional inputs, that his major problem is his language barrier. If this is the case, we would recommend his learning English--as a foreign language--as having top priority in his prescriptive schedule.

Additional Comments on Reverse Side

CL EDUCATIONAL REPO

BIRTH DATE : 1-25-51
LAST SCHOOL ATTENDED (include Address) :
GRADE LEVEL ENROLLED : 10th
DATE OF DEPARTURE :
DATE TRANSCRIPT REQUESTED :
TRANSCRIPT RECEIVED : ☒ Yes ☐ No Sacramento

CURRENT TEST DATA

CTMM SHORT FORM (IQ) LEVEL: DATE GIVEN: NA
Non-Lang Factors:
Language Factors:
Total Mental Factors:
Intel Grade Placement:

SRA IQ TEST DATE GIVEN: 7-7-67
L-Score: Q-Score: Verbal Total: Non-Verbal: 104

REVISED BETA EXAMINATION (Performance) Beta IQ: DATE GIVEN: NA

CALIF. ACHIEVEMENT TEST LEVEL: FORM: DATE GIVEN: NA
RV: RC: Total Read:
AR: AF: Total Arith: Grade Placement:
Lang: Spell: Total Lang:

WIDE RANGE ACHIEVEMENT TEST DATE GIVEN: 7-7-67
Read Grade: Spell Gr: Arith Gr: 2.3

GATES READING SURVEY DATE GIVEN: 7-7-67
Reading Vocabulary: 9.6 Level of Comprehension: 10.0

COMMENTS (Include other test data)

Quiet, terse, somewhat apathetic in tone, seemingly spent most of our interview attempting to withhold any meaningful information regarding himself. According to he was a "fair" student while attending a school, received "average" grades, and was suspended on several occasions for "messing up." Apparently has no interest in completing his high school education but instead hopes to enter continuation school upon return to the public school system. claims to have had previous agricultural field employment and suspects he will involve himself in this line of work as an adult.

When returned to a school setting should be placed in remedial math classes and should be encouraged to reconsider dropping out of the regular school program.

High School Teacher

Case 1 NRCC 7-12-67 EDUCATION

YA 1.622 REV. 5 (10-66)

YOUTH AUTHORITY CASE SUMMARY

NAME *Case 1*

YA #

PRESENT STATUS.
NEW COMMITMENT: x
RECOMMITMENT:
PAROLE REVOCATION:

OTHER NAMES:

ADDRESS :
Sacramento, California

COMMITMENT OFFENSE: 602 W&I Code, Burglary, Viol. of Prob. Beyond Control & Runaway
MOST RECENT OFFENSE:
(IF DIFFERENT)

SEX : Male
AGE : 16-5
BIRTH DATE : 1-25-51
MAR. STATUS: Single
COMPLEXION: Dark
HEIGHT: 5-½

DATE ARRESTED: 5-18-67

BIRTHPLACE : , California
DESCENT : Mexican/Caucasian
RELIGION : Catholic
WEIGHT: 97
EYES: Brown
HAIR: Black

COURT: Juvenile
COUNTY: Sacramento
JUDGE:

IDENT. MARKS: Tattoos: ½" cross right hand, 2" ribbon w/"LP" inside right forearm.

	DATE
ORIG. COMMITMENT:	6-2-67
RECOM. OR REVOKED:	
RECEIVED:	6-20-67
JURIS. EXPIRES:	1-25-72

NARCOTICS HISTORY :
SUSPECTED OR KNOWN USE OF NARCOTICS OR DRUGS ☒ YES ☐ NO
IF YES, CHECK DRUGS INVOLVED
- ☐ OPIATES (NATURAL OR SYNTHETIC)
- ☒ MARIJUANA
- ☐ DANGEROUS DRUGS (AMPHETAMINES OR BARBITUATES)
- ☐ OTHER SPECIFY

WAS ALCOHOL INVOLVED IN PRESENT OFFENSE ☐ YES ☒ NO

RELATIONSHIP		AGE	NAME	ADDRESS	TELEPHONE
FATHER		40		Unknown	
MOTHER		37		Same as Ward	
OTHER	Stepfather	36		Same as Ward	
	Siblings	20		Power Inn Road Sacramento, Calif.	
		19		Same as Ward	
		17		Same as Ward	
		6		Same as Ward	
		4		Same as Ward	
		2		Same as Ward	

INSTITUTION: NRCC

DATE: 7-7-67

YA 1.621 REV 2 (5-64)

PRIOR RECORD

2-26-65	Burglary	Wardship, Probation
7-3-65	Burglary	Continued Probation with Relatives
9-23-65	Probation Modification	Return to Mother
10-19-65	Runaway	Sacramento County Boys Ranch, Graduated 6-29-66
1-15-67	Intoxication	Referred to Boys Supervision

MOST RECENT OFFENSE

May 10, 1967, at approximately 9:00 p.m. admitted that he sniffed glue on his front yard. His mother found him under the influence of the intoxicating fumes of glue. The morning of May 11, 1967, she called the probation officer and reported the activity to the officer.

When became aware that his mother was going to report him to the probation officer, he ran away from home. He remained away from home from May 11, 1967 until he returned on May 17, 1967. When questioned in regard to his activities, reported that he spent his time "here and there." He refused to divulge where he slept, however he indicated that he ate several meals at the home of an aunt.

It is further related that on May 10, 1967, spent some time with his friends at Max Baer Park. His sister informed his mother that they were sniffing glue in the park and that . had become involved in an argument with one of his friends and came home. Later that night he sniffed glue in his front yard. The mother reported that he was incoherent and almost unconscious when she discovered him.

CO-OFFENDERS

None

SOCIAL EVALUATION

The Ward and his Family

The youngster's parents were separated when he was approximately six years of age. His mother has two older children which resulted from a common-law relationship with a , the relationship lasting from 1944 to 1949. She was also living in a common-law relationship with her current spouse for several years prior to their legal marriage in 1960.

The stepfather also has children from a previous marriage and is paying $40 per month for child support. natural father is supposed to contributed $80

Case 1

a month for support although these payments are not regular.

states that his mother uses the money which is contributed by his natural father to purchase his clothing and other basic necessities. He does not know his natural father and seldom hears his mother speak of him. He resents his stepfather and feels that if he were not in the home things would be much more pleasant.

Seemingly, according to records, the youngster's stepfather is the disciplinarian in the family. At times he deals rather harshly with the boy and feels that a great deal of difference is made in the handling of the children. The stepfather drinks quite heavily and almost invariably when he is intoxicated he starts arguments with all of the older members in the family. He forces the boy's mother to do everything that he wants done, and feels that this is the reason that he was sent to

According to this youngster, the entire family atmosphere is extremely negative. The parents argue quite often and the little ones whine and cry at the slightest provocation. The stepfather forces to wait on the small ones, but will not allow him to correct them. The boy is not anxious to return home, yet he realizes that he must have someone upon whom he can depend. He feels that there is a possibility of living with his older married sister or one of his aunts who live in Sacramento.

The Ward and the Community

On May 23, 1967, was examined by a Dr. A PPD test was administered and the results were positive. It should be noted that has a history of positive PPD tests while at the Sacramento County Boys Ranch. However, a chest X-ray was given with negative results. The Public Health Clinic recommended that be given another chest X-ray on November 30, 1967. Other than the positive PPD, the youngster seems to be in relatively good health.

During the time that was on probation his adjustment in the community, home and in school were extremely poor. His mother was constantly concerned about his use of glue and each time he was allowed to go to a park with his friends he would come back under the influence of the fumes of glue. It appeared to the probation officer that this youngster tried extremely hard to be very much like his brother who has been in the Youth Authority and now is possibly in a County Road Camp.

admits that his friends do have a great influence over his behavior as all of them have been in difficulty from time to time, and they all enjoy the same things. He did not enjoy school because he did not always understand his subject material, and eventually got to the place where he hated school.

RELIGIOUS STATUS

is a baptized Catholic who has received his First Holy Communion.

He claims having attended Catechism instructions for two summer school sessions at St. Peter's Church in His understanding of the Catholic faith is so limited that should he at some future date desire Confirmation, something which now seems most unlikely, a completed course should be insisted upon.

His parents, both lapsed Catholics, have terminated their marriage in divorce. His mother is now living in a ligamenous union with another lapsed Catholic. From many essential points of view the home setting leaves much to be desired.

I regret very much having to say that my interview with accomplished very little. Despite every effort on my part he failed to be cooperative. He was somewhat sulky, hostile and disrespectful. He was distant, unaccepting, suspicious and difficult to reach.

He admitted having no feelings of remorse, nor any pangs of conscience. He also stated that he was neither ashamed nor embarrassed. His answers to simple questions were neither pertinent nor relevant, and, upon being pressed for greater details, he immediately showed resentment.

From the religious point of view he is most disappointing. With little or no appreciation for the Catholic Church he states without any apparent feelings of guilt that he habitually absents himself from Sunday Mass, that he never receives the sacraments and that he habitually neglects his daily prayers. Briefly, in his relationship with God he is foreign, remote and divorced. His soul, by reason of abuse, is suppressed, his conscience has become calloused and his philosophy of life leaves little or no room for the supernatural.

His attitude is very disappointing, his frame of mind is somewhat discouraging and reasons to be optimistic are rather difficult to come by.

Since there must be some goodness in this boy and since I strongly suspect that the opposition displayed may be on purpose momentarily acquired, I plan upon further meetings with him in the hopes that I will eventually succeed in breaking down his barriers.

Case 1

GROUP LIVING EVALUATION

General Attitude and Social Behavior

has managed to stay out of serious trouble while in the living unit setting. He has typically tested the limits and retreated when he felt he has overstepped the bounds. He has shown some sensitivity for other wards and by contrast has done and is very capable of subtle agitation. He relates with staff on a moody basis.

Personal Characteristics

size and actions are quite deceptive. He talks quite a bit more maturely than his size and actions would indicate. However, he has not taken on effective leadership role primarily because of his size. He walks in a very lethargic, almost like an old man, manner.

Family Relationships

He has not written one letter to his mother and received several visits but no letters. This is probably because of the parents living so close to the Clinic.

Work Habits

He has worked on kitchen detail without any difficulty. His room upkeep has been from fair to good.

Recreational Interests and Abilities

has played some softball on occasions, showing exceptional ability and coordination for his size, but most of his recreational interest rests in cards and conversation with friends.

Techniques for Handling Ward

A very direct approach is needed, for is quite ready to submit to rehabilitation to help him modify his delinquent behavior. He seems quite unsure of his ability to terminate his glue sniffing habit once released.

b:

Case 1

STAFF SUMMARY

The stepfather is the stronger of the two parents and resents the man. Apparently the parents are not in agreement as to how to handle the lad.

He is seen as a likable, personable youngster. He is not seen as a boy who has the "small man" complex but handles himself in a mature fashion. He is well liked by boys and staff and can relate to any ethnic group. The boy typically tests limits and knows when to discontinue the testing.

At this point he has no intentions of changing his delinquent patterns. For this reason staff thinks that a period of institutionalization will at least give him some insight into his behavior and perhaps he will learn to adjust more satisfactorily.

MEDICAL REPORT

Being followed by Sacramento County Health Department as a non-infectious tuberculosis contact. Next appointment at Clinic is for November, 1967. Should continue his daily anti-tubercular prophylactic medication. Allergic to poison oak. Physically fit for full activity.

VIOLENCE PRONENESS

VO-b

RECOMMENDED PLACEMENT

School

/A

Staffing Group:
ervisor
Supervisor

AF:slf

Case 1

CASE 2

FOR USE WITH 1963 NORMS

California Achievement Tests

Junior High Level • GRADES 7 8 9 • Form W

DIAGNOSTIC PROFILE SHEET

DEVISED BY ERNEST W. TIEGS AND WILLIS W. CLARK

Name -

School PROGRAM City STOCKTON, CALIF.

M [✓ F] Grade 11 Teacher or Examiner

Date of Test 1968 4 23

Date of Birth 1951 6 7

Student's Age 16 10 (202)

READING

	1. READING VOCABULARY: A Mathematics	B Science	C Social Science	D General	TOTAL (A + B + C + D)	2. READING COMPREHENSION: E Following Directions	F Reference Skills	G Interpretations	TOTAL (E + F + G)	TOTAL READING
Grade Placement					16.4				7.3	7.9
AAGP*										
Other Scores†										
Raw Score	12	14	12	12	50	6	12	14	32	82
Possible Score	15	15	15	15	60	15	26	45	86	146

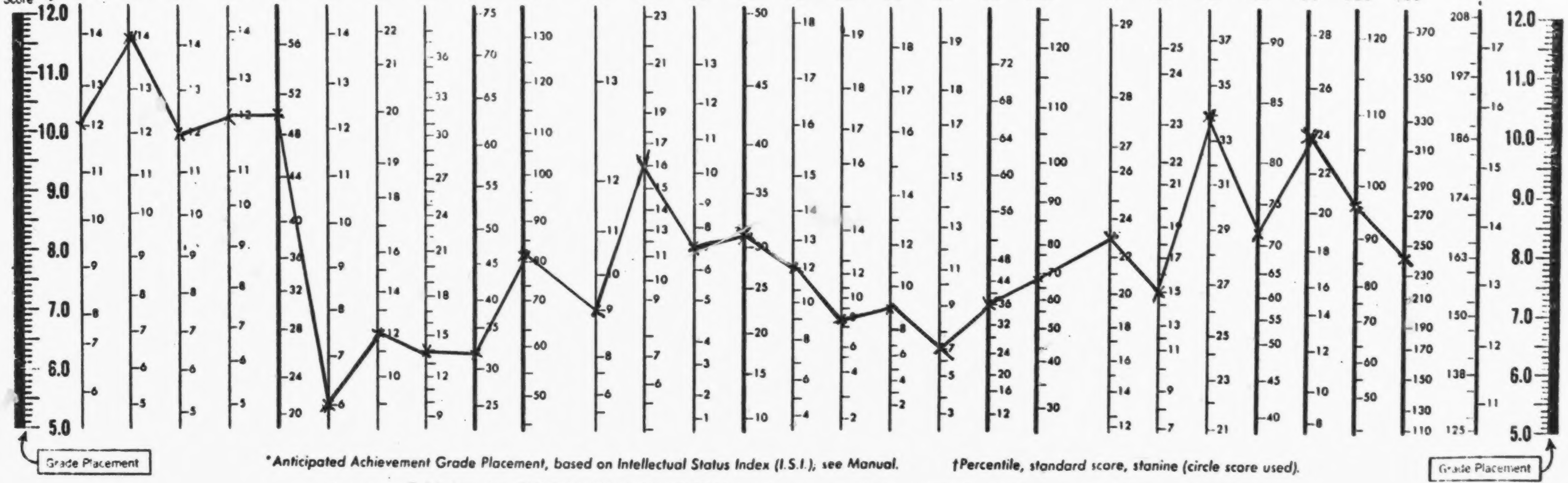
ARITHMETIC

	3. ARITHMETIC REASONING: A Meanings	B Symbols, Rules, & Equations	C Problems	TOTAL (A + B + C)	4. ARITHMETIC FUNDAMENTALS: D Addition	E Subtraction	F Multiplication	G Division	TOTAL (D + E + F + G)	TOTAL ARITHMETIC
Grade Placement				8.4					7.1	7.5
AAGP*										
Other Scores†										
Raw Score	9	16	7	32	12	8	9	7	36	68
Possible Score	15	25	15	55	20	20	20	20	80	135

LANGUAGE

	5. MECHANICS OF ENGLISH: A Capitalization	B Punctuation	C Word Usage	TOTAL (A + B + C)	6. SPELLING: TOTAL SPELLING	TOTAL LANGUAGE	TOTAL BATTERY
Grade Placement				8.4	10.1	8.5	8.1
AAGP*							
Other Scores†							
Raw Score	23	15	34	72	24	96	246
Possible Score	30	29	40	99	30	129	410

AGP	
ISI	
GCA	
CA	



*Anticipated Achievement Grade Placement, based on Intellectual Status Index (I.S.I.); see Manual.

†Percentile, standard score, stanine (circle score used).

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Case 2

Diagnostic Analysis of Learning Difficulties*

California Achievement Tests—Junior High Level Battery

1. Reading Vocabulary

A. MATHEMATICS

||| 1-15 ...... Basic vocabulary

B. SCIENCE

| 16-30 ...... Basic vocabulary

C. SOCIAL SCIENCE

||| 31-45 ...... Basic vocabulary

D. GENERAL

||| 46-60 ...... Basic vocabulary

2. Reading Comprehension

E. FOLLOWING DIRECTIONS

| 61, 62, 64, 68 ... Simple choice
𝍸 63, 65, 66, 67, 69, 70, 71, 73 ... Definitions and directions
| 72, 75 ...... Math. directions
| 74 ...... Map direction

F. REFERENCE SKILLS

|| 76, 77, 78, 79 ... Parts of book or newspaper
| 80 ...... Use of dictionary
|| 81, 82, 83 ... Use of index
|| 84, 85, 86 ... Table of contents
| 87, 88, 89, 90 ... Reading a graph
|| 91, 92 ...... Library classifications
| 93, 94, 95, 96 ... Selecting references
||| 97, 98, 99, 100, 101 ... Reading a map

G. INTERPRETATION OF MATERIAL

𝍸 |||| 102, 104, 105, 107, 111, 112, 113, 115, 117, 119, 120, 126, 127, 128, 129, 130 ... Directly stated facts
||𝍸𝍸 𝍸𝍸 103, 106, 108, 109, 110, 116, 118, 121, 122, 123, 124, 125, 131, 132, 133, 134, 135, 136, 137, 138 ... Inferences
114 ...... Topic or central idea
||| 139, 140, 141, 142 ... Organization of topics
|||| 143, 144, 145, 146 ... Sequence of events

3. Arithmetic Reasoning

A. MEANINGS

||| 1, 2, 3, 4, 5 ... Writing numbers
| 6 ...... Writing money
| 7 ...... Writing per cent
8, 9, 10 ...... Roman numerals
11 ...... Whole numbers
12, 13, 14 ... Fractions and decimals
| 15 ...... Exponents

B. SYMBOLS, RULES, & EQUATIONS

16, 17, 21, 22, 23, 24, 25 ... Symbols
| 18, 19, 20 ... Vocabulary
||| 26, 27, 28, 29, 30 ... Rules and formulas
|||| 31, 32, 33, 34, 35 ... Negative numbers
| 36, 37, 38, 39, 40 ... Solving equations

C. PROBLEMS

41, 42, 43 ... Two-step
42, 43 ...... Sharing and averaging
|| 44, 45, 48, 53 ... Square and cubic measure
| 46 ...... Ratio
||| 49, 50, 51, 52 ... Percentage
|| 47, 54, 55 ... Commission and discount

4. Arithmetic Fundamentals

D. ADDITION

56, 57 ...... Simple combinations
58, 59, 60, 61 ... Carrying
| 57, 60, 62 ... Zeros
59, 60, 61 ... Column addition
61, 62 ...... Adding money
63 ...... Adding numerators
64, 66, 67, 68, 69 ... Common denominators
✓| 65, 66, 67, 68, 69 ... Mixed numbers
|| 70, 71 ...... Fractions and decimals
|| 72, 73 ...... Writing decimals
| 74 ...... Adding percentages
| 75 ...... Denominate numbers

E. SUBTRACTION

76, 77 ...... Simple combinations
𝍸 78, 79, 80, 81, 82 ... Borrowing
| 77, 79, 80 ... Zeros
|| 81, 82 ...... Subtracting money
✓| 83, 84 ...... Subtracting numerators
✓| 85, 86 ...... Common denominators
87 ...... Whole from mixed numbers
✓| 88, 89 ...... Borrowing, mixed numbers
| 90, 91 ...... Fractions and decimals
|| 92, 93 ...... Writing decimals
94 ...... Fractional parts
| 95 ...... Denominate numbers

F. MULTIPLICATION

|| 96, 97, 98, 99, 100, 101, 102 ... Tables
97, 98, 101 ... Zeros in multiplicand
| 100, 101, 102 ... Zeros in multiplier
| 99, 100, 101 ... Two-place multipliers
✓|| 103, 105, 106 ... Cancellation, fractions
✓| 104 ...... Mult. num. and denominator
|| 107, 108, 109, 110 ... Mixed numbers
| 111 ...... Fractions and decimals
| 112, 113 ...... Pointing off decimals
| 114 ...... Per cent of number
| 115 ...... Denominate numbers

G. DIVISION

| 116, 117, 118, 119, 120, 121, 122 ... Tables
117, 119, 120, 121 ... Zeros in quotient
122 ...... Remainders
✓𝍸 ||| 123, 124, 125, 126, 127, 128, 129, 130 ... Inverting divisors
✓||| 128, 129, 130 ... Mixed numbers
| 131 ...... Fractions to decimals
|| 132, 133, 134 ... Pointing off decimals
| 135 ...... Fractional parts

5. Mechanics of English

A. CAPITALIZATION

2 ...... Title of book
| 3, 5, 8, 23 ... Names of persons
| 6, 7, 26 ...... Titles of persons
9, 16, 17, 21, 22, 24 ... Names of places
10, 19 ...... Pronoun "I"
|| 1, 11, 27, 28 ... First words of sentences
|| 12, 25 ...... Days
13, 18, 30 ... First words of quotations
15 ...... Special day
4, 14, 20, 29 ... Over-capitalization

B. PUNCTUATION

✓||| 31, 32, 37, 38, 40, 42, 47, 48, 51, 53, 54, 56 ... Commas
✓|||| 33, 34, 39, 46 ... Apostrophes
36, 43, 45, 52, 57 ... Question marks
||| 41, 50, 59 ... Quotation marks
| 49 ...... Quotation within quot.
||| 35, 44, 55, 58 ... Over-punctuation

C. WORD USAGE

60, 64, 65, 67, 69, 77, 81, 85 ... Good usage
| 61, 66, 70, 76, 87 ... Tense
| 62, 68, 71, 74, 78, 80, 84 ... Parts of speech
63, 73, 79, 82 ... Number
72, 75, 83, 86 ... Case
✓|||| 88-99 ...... Recognizing sentences

6. Spelling (100-129) See profile

L

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* Consult Part 2 of the Manual for uses.

(Sample form)

PRELIMINARY PRESCRIPTION

Name: Case 2

Grade Level: 8.1

READING		ARITHMETIC		LANGUAGE	
Reading Vocabulary 10.4	Reading Comprehension 7.3	Arithmetic Reasoning 8.4	Arithmetic Fundamentals 7.1	Mechanics of English 8.4	Spelling 10.1
Coronet- Vocabulary Growth	Coronet- Your Study Skills	Pretest for RRF-Fractions Lab (assign appropriate sections)	→	HBW- 2200 English (units 8 and 9)	ACC- Spelling by Principles
EDL- Word Clues Book I	UEL- Study Skills 4024	Pretest for EBP- Seventh Grade Math (assign appropriate sections)		Welch- Tutorfilm Mechanics of English series E-F: Punctuation	Chandler- Spelling and Vocabulary (not P.I.)
Chandler- Learning Words in Context (not P.I.)	CTB- Basic Skills Reading Interpretations I and II				

CLI EDUCATIONAL REPOR

[illegible] DATE : 6-9-51
LAST SCHOOL ATTENDED :
(Include Address) :
GRADE LEVEL ENROLLED : 11th DATE OF DEPARTURE :
DATE TRANSCRIPT REQUESTED : TRANSCRIPT RECEIVED : ☐ Yes ☒ No San Joaquin

CURRENT TEST DATA

CTMM SHORT FORM (IQ) LEVEL: DATE GIVEN: NA
Non-Lang Factors: Total Mental Factors:
Language Factors: Intel Grade Placement:

SRA IQ TEST DATE GIVEN: 2-27-68
L-Score: 107 Q-Score: 62 Verbal Total: 89 Non-Verbal: 81

REVISED BETA EXAMINATION (Performance) Beta IQ: 96 DATE GIVEN: 2-27-68

CALIF. ACHIEVEMENT TEST LEVEL: Jr Hi FORM: W DATE GIVEN: 4-25-68
RV: 10.4 RC: 7.3 Total Read: 7.9
AR: 8.4 AF: 7.0 Total Arith: 7.5 Grade
Lang: 8.4 Spell: 10.1 Total Lang: 8.8 Placement:

WIDE RANGE ACHIEVEMENT TEST DATE GIVEN: 2-27-68
Read Grade: Spell Gr: 7.6 Arith Gr: 6.5

GATES DATE GIVEN: 2-27-68
Reading Vocabulary: 10.5 Level of Comprehension: 8.9

COMMENTS (include other test data)

is a pleasant girl and was cooperative while involved in group testing. When she came in for educational interview, I noticed her rather inappropriate laughter, and the extreme rapidity of speech. Her conversation was endless and words "rushed" out of her mouth, often seeming not to have been thought of at all before being spoken.

She says her mother has been in the , State Hospital over a number of years, and consequently has not been able to be with the family.

desire and reason for wanting to finish school seems to be an effort to please her dad more than herself. "My dad wants me to finish school so that's what I'm going to do."

Her goal is rather odd. She wants to go to foreign countries to search for and dig up old Egyptian tombs. She states a desire to work in a hospital this summer as a volunteer, and added: "I don't want to get paid, money is not important anyway."

DMP:sr Home Economics Teacher **EDUCATION**
Case 2 YA# NRCC 3-13-68
A 1.022 Rev. 3 (10-66)

YOUTH AUTHORITY CASE SUMMARY

NAME : Case 2

YA #

OTHER NAMES: None

ADDRESS :
ca, California

PRESENT STATUS:
NEW COMMITMENT: X
RECOMMITMENT: ___
PAROLE REVOCATION: ___

COMMITMENT OFFENSE: 602 W&I, In Danger of Leading Lewd and Immoral Life, Beyond Control, Viol. of Prob., Foster
MOST RECENT OFFENSE (IF DIFFERENT): Home Runaway

SEX : F
MAR. STATUS: Single
AGE : 16-8
COMPLEXION: Medium
BIRTH DATE : 6-9-51
HEIGHT: 5-7½
BIRTHPLACE : Arizona
WEIGHT: 173
DESCENT : Caucasian
EYES: Blue
RELIGION : Catholic
HAIR: Brown
IDENT. MARKS: 3" x 1" scar right leg
4" scar right arm

DATE ARRESTED:
COURT: Juvenile
COUNTY:
JUDGE:

	DATE
ORIG. COMMITMENT:	2-1-68
RECOM. OR REVOKED:	
RECEIVED:	2-21-68
JURIS. EXPIRES:	6-9-72

NARCOTICS HISTORY : SUSPECTED OR KNOWN USE OF NARCOTICS OR DRUGS ☐ YES ☐ NO
IF YES, CHECK DRUGS INVOLVED
☐ OPIATES (NATURAL OR SYNTHETIC)
☐ MARIJUANA
☐ DANGEROUS DRUGS (AMPHETAMINES OR BARBITUATES)
☐ OTHER SPECIFY___

WAS ALCOHOL INVOLVED IN PRESENT OFFENSE ☐ YES ☐ NO

RELATIONSHIP	AGE	NAME	ADDRESS	TELEPHONE
FATHER	40		Same as ward	823-4925
STEPMOTHER			Same as ward	
MOTHER	37		Oregon State Hospital	Oregon
OTHER				
AUNT			San Diego, California	
SIBLINGS	17	)	Foster home	
	14	)	placements	
	12	)	in Oregon	
HALF-SIBLINGS	8			
	6	)		
	4	)		
	11		Same as ward	
	10		Same as ward	
	6		Same as ward	

INSTITUTION: NRCC

DATE: 3-7-68

YA 1.621 REV 2 (5-64)

PRIOR RECORD

11-14-66	Lewd life, out of control	Wardship placed in a 24-hour Boarding School, placed in custody of aunt 5-26-67.
9-1-67	Lewd life	Wardship, disposition transferred to County, wardship. probation, mental health clinic 10-9-67.
12-4-67	Out of control	Foster home placement 12-22-67

MOST RECENT OFFENSE

On December 4, 1967, the ward appeared before the Juvenile Court of San Joaquin County and was ordered placed in a foster home. On December 22, 1967, by order of the Court, the ward was ordered placed in the foster home of and was placed on the same date. On the following day, December 23, 1967. reported to the Stockton Police Department that the ward had run away. On December 27, 1967, the ward appeared at the home of and asked to use the telephone because she was lost. Mrs. became suspicious of the ward because she was wearing no shoes and called the officers to pick her up which they did. The ward told the arresting authorities that she ran away from the foster home because the foster mother had a very wild party that involved from 30 to 50 guests. The ward indicated some of the guests were drinking vodka and beer while others were upstairs having intercourse. She also indicated that she saw syringes, needles, etc., used in shooting heroin. She claims she smelled marijuana smoke throughout the house. The ward claims that the foster mother then abandoned the home and the relatives took over. She indicates also that she was propositioned by one of the male guests in the home.

The ward indicates that after leaving the home, she was picked up by a couple of strangers who were both Negro males. The ward claims she spent the time between December 2, and December 26, associating with two men who were stealing tires, She knew these men only by the name and She indicated she was involved in the stealing in that she acted as a look out and also was used to attract the attention of the victim of the tires, while the two men carried them out to the car. On the evening of December 26 she left a bar in the company of a Mexican adult. He requested the ward disrobe but she demanded money which he refused to pay her. She is very vague and confused as to the above details and it would be difficult to decide whether her story is fiction or fact. When asked by the police, she denied her identity and when the foster mother,

Case 2 YA# NRCC 3-7-68

MOST RECENT OFFENSE (Cont'd)

went down to the police station she identified the ward as a ward of the local Juvenile Court. At that time the ward is alleged to have told that she was going to make up the stories about the party to get even with her for identifying her properly.

CO-OFFENDERS

None

SOCIAL EVALUATION SUMMARY

The ward's parents were married in California in 1949 and were divorced in 1955, At that time the mother was awarded custody of the children and since that time the father has contributed little or nothing toward supporting his wife and children. The ward is the second oldest of four children born to her natural parents. In 1958 the mother entered into a common-law relationship with ________in San Diego. Three children were conceived through this arrangement. At the present time the ward's mother is in the______State Hospital. The ward's three siblings are in foster homes in ________ and likewise her mother's three illegitimate children which she conceived by M _______ are also in foster homes in ________The ward's natural father also has three children who are living with him. The mother is alleged to have has a "nervous breakdown in 1965" and she was hospitalized in _____She was later released to her common-law husband but was again returned to the hospital very recently. The hospital diagnosis has been "Schizophrenic Reaction." The ward claims that her mother taught her that it was all right to be promiscuous as she was.

The ward's history of delinquency extends over a period of about a year and a half. In November, 1966, the ward was taken into custody as she was living in a hotel room with a known prostitute. At that time she was released to an aunt pending further Court action. On November 1, 1966, another petition was filed in the interest of the ward in that she had again run away from the home and was apprehended in San Diego. She was then ordered placed in a boarding home where 24 hour supervision was available. On May 26, 1967, she was released and returned to the home of her aunt who lives in _____________ In August, 1967, the ward ran away from the home of her aunt and was apprehended several weeks later by the police. At that time it was found that she had been very immoral and that she had gone to _____________ where she allegedly got married to a man whom she had intercourse with quite regularly during her runaway. In October, 1967 the ward was transferred to ________County which is alleged to be the residence of her natural father. Later

Case 2

SOCIAL EVALUATION SUMMARY (Cont'd)

she was placed in the home of ____________ indicated in the presentation of the problem above. She remained there up until the time she got into difficulty.

The ward is a rather tall, husky, Caucasian girl. She does not appear to have any sense of direction as to where she is going or what she is doing. Her goal is to be a skindiver. She described herself as an experimental girl. When questioned about what this means, she indicates that she likes to try all drugs available as well as to have intercourse with men of various races just to see how it is. She claims she has used marijuana and dangerous drugs quite extensively but she is not committal as to whether or not she has used LSD. She continues to blame her mentally ill mother for her difficulties and indicates that the mother is at fault because she did not teach her what is right and wrong and also because the mother had indicated to her that sexual activities are not harmful nor wrong. The ward claims that she hates to be locked up but has deliberately rejected all plans to help her. She now appears to be rather hedonistic and also appears to be self-centered. The ward was seen by a psychiatrist at the ____________ County Juvenile Jail. It is his opinion that the ward needed 24-hour supervision but that she was not mentally ill. She has also recently been seen by ________ ________ a psychologist. The psychologist found the ward to be extremely immature with little in the way of ego resources. It was felt that she had a behavior disorder but that she was functioning within normal limits of the intelligence range. The psychologist found the prognosis for improvement rather poor and the ward used denial as a mechanism against her anxiety.

Social Worker, VA

RELIGIOUS EVALUATION

______________ is a baptized Catholic who has never received any formal catechism instructions and who is consequently very limited in her knowledge of Catholicism. It is perhaps worthy of note that some months ago she attempted a marriage which is invalid by reason of defect of form.

________is a child of a mixed marriage, her father being Protestant, while her mother is a lapsed Catholic. Their marriage, having ended in divorce, both are now ligamenously remarried.

Impressions of the Chaplain

I thought, handled herself beautifully during the interview. Displaying an excellent attitude, she proceeded on her own initiative, to discuss her life in detail and with accurate self-evaluation, voiced realistic plans for the future. Expressing faith and confidence in the personnel of this intitution, she said "I am fully reconciled to whatever you people think is best for me. Naturally, I would like to go home, but if you decide otherwise, I am sure that it is going to be in my best interest."

______ is definitely in need of a home setting conducive to love, security, and the assurance of being accepted. Her yearing and desire for love has never been fulfilled by her parents, consequently explaining her repeated attempts to gain attention. Had she been the product of a normal home setting, I feel certain that she could have been saved from a Youth Authority commitment. She is amply possessed of a natural goodness capable of being cultivated. On the basis of instinct, she respects the natural and divine law and with the opportunity presenting itself, it is most likely that religion will be meaningfully embraced.

Case 2

GROUP LIVING EVALUATION

General Attitude and Social Behavior

________ has made a good adjustment to our program. __________associated with girls like herself. She gets along with her peers as well as staff.

Personal Characteristics

________ has shown no leadership ability. She is well mannered and good emotional tone.

Family Relationships

______has written to her mother and father but has received no mail from them. She writes to mother in hospital asking when she will be home so they can be together. She asks father to please write her.

Work Habits

_______ volunteers for work detail and works quietly without supervision. She keeps a good room, above dorm standards

Recreational Interests and Abilities

_______participates in all dorm activities with no particular interests or abilities.

Techniques for Handling Ward

No special technique of handling is required for ___________ The direct approach is fine for

Group Supervisor

nslf

Case 2

YA# NRCC 3-11-68 GROUP LIVING

STAFF SUMMARY

The ward is tall, overweight, 16-year old Caucasian girl. The ward has been known to the authorities for a period of more than a year for various types of offenses but including mainly beyond control and lewd life. She accuses her most recent foster mother of having a big party involving 30 to 50 adults who were involved sexually, drinking and using needles in their arms. She later indicated this was a fabrication because she was angry at the foster mother for reporting her to her parole officer. She did run away from the foster home and become involved with two men who were stealing tires. She later became involved with an adult Mexican.

She is fully ready to take the responsibility for her actions. She indicates that she has been involved in various types of drug usage but not to the extent that she was addicted or that she was having difficulty not using it. The staffing team could see her quite uniformly as a hedonistic, sociopathic inclined girl who needs considerable help at the present time. Since the completion of the attached report, we have had a visit from the ward's mother, stepfather and an older agent who indicates she was not very well received in the home of the ward's father and step-mother. As to the situation in ________ it is indicated that the mother has recently been released from the __________hospital to the care of her present husband. The mother is seen as rather listless and unmotivated but there was no indication of any psychotic thinking or acting. Her husband seems to be a rather plain, easy going, middle-aged man who is willing to receive the wife home in spite of her erratic behavior in the past. It is indicated that the ward's two siblings and her three half-siblings are currently in foster homes in Oregon as dependent children. The ward's 17-year-old sister, _____________ seeemed to be the spokesman for the group. She appears to be an adequate and well adjusted young lady with a great deal of potential for success. She indicates that we should contact Mr.____________ Public Welfare Officer in ____________, telephone number _______ who is the probation officer for the six siblings and half siblings who are presently in _____________. It might be well to consider this as a possible resource. A visit to the ward's natural father did not prove as hopeful for the ward as did the visit to the mother and stepfather. The father greeted our parole agent with a great deel of hostility and indicated that he wanted no part of the ward. He indicated that his present wife completely rejects the ward and he is going to stick with his wife. The father indicates that he has had little contact with the ward during the past 16 years and that her mother apparently was quite promiscuous during these years.

Case 2 YA# NRCC 3-15-68 STAFF SUMMARY

STAFF SUMMARY (Cont'd)

The ward's parole agent indicates that the ward could possibly be released to the community without lengthy institutionalization. The parole agent indicates that the ward is a bright, alert youngster with a great deal of insight. On the other hand the NRCC staffing group sees the ward as a highly sophisticated, delinquent girl who is developing some sociopathic thinking.

The ward's behavior on the dormitory is quite acceptable and she works well without close supervision. Our school indicates that the ward's intellectual functioning is very near the lower limits of normal range of intelligence. Academically she functions between the 7th and 10th grade levels with the lowest mark being in arithmetic. She was pleasant and cooperative while in our school at NRCC. Our Chaplain saw the ward quite positively. He indicated that she is definitely in need of a home setting conducive to love, security and the assurance that she is wanted. The staffing group saw the ward as being in need of institutional help at the present time and indicates that she would fit into the program at Los Guilucos. However, it is also indicated by the group that it might be well to start considering a placement for the ward as it will be difficult. As indicated by the ward's sister, it might be well to contact the social worker who is active with the home in the State of

MEDICAL REPORT

Physically fit for full activity.

RECOMMENDED PLACEMENT

Los Guilucos School for Girls.

Social Worker, YA

Staffing Group:

Senior Group Supervisor
Supervisor
Group Supervisor
Home Economics Teacher

COP:rh

Case 2 YA# NRCC 3-15-65 CII#
STAFF SUMMARY

WARD PROFILE

RECOMMENDED PROGRAM

School Date 3-15-68

SIGNIFICANT PLACEMENT PROBLEMS

☒ Yes ☐ No Date 3-15-68

DRUG INVOLVEMENT

LEVEL	AT COMMIT	1ST PAROLE	2ND PAROLE	3RD PAROLE	4TH PAROLE
DATE	2-68				
Reg.					
[illegible]					
Exp.	H DD				
Invol. N.U.					
No Invol.					

SEVERITY OF OFFENSE

[illegible]					
[illegible]					
III					

SIGNIFICANT INFORMATION

	YES	NO	DATE
Medical		X	3-13-68
Legal		X	3-15-68
Psychiatric		X	3-15-68
Escape History		X	3-15-68

INTELLIGENCE TESTING

TEST	DATE		SCORE
CTMM		Lang	
		Non-Lang	
		Total	
SRA	2-27-68	L	107
		Verb Q	62
		Total	89
		Nonverbal	81
Rev. Beta	2-27-68		96
WISC ☐		Verbal	
		Nonverbal	
WAIS ☐		Total	
		Category	

ACADEMIC ACHIEVEMENT

TEST	DATE		SCORE
WRAT	2-27-68	Arith	6.5
		Spell	7.6
GATES	2-27-68	Comp	8.9
		Vocab	10.5

I LEVEL

DATE	LEVEL	SUBTYPE

JESNESS INVENTORY

Asocial Index

DATE	T-SCORE
2-68	76

Case 2 Y.A.# Location NRCC Date 3-15-68

2

CHAPTER V

MANAGING THE LEARNING ACTIVITIES

Before the student actually begins his studies, he should have a counseling interview with the manager. During the interview, the manager will review and interpret the student's test scores and show him how they were used to prescribe the programmed materials he will use. The explanation should be couched in terms of the student's goals.

The student may not have goals, or those that he has may not be realistic in the light of his ability, attitudes, and opportunities for further study. In such a case, considerable patient endeavor should be exerted to help him set or re-set goals. For a young child, the goal may just be to "get promoted." For the older student, the goal may be college, a vocation, or a profession. Whatever the professed goal, treat it with respect. If it is a long-range one, try to help the student set some intermediate goals so that he will be able to see that he is making progress.

If the student is critical of the prescription, listen to him. For example, he may think the grade level of assigned courses is too low for him. Tell him that he may be right. Assure him that the prescription will be changed if need be. Try to get him involved in planning for himself. Let him see that you have respect for his opinions, that you and his program are flexible, and that you expect him to work with you to find the materials which serve him best.

At this time, he should also secure an explanation of any "rules" under which you operate, including those pertaining to testing and grading.

Orient the Student to P.I.

P.I. may be confusing to the student who is using it for the first time. The layout, the route he follows through the program, the way he confirms his responses--all these will be new to him, and they will vary from one program to the next. He will need an explanation and demonstration of how to work through different kinds of programs, including those used in machines.

If your students enter the program singly, the orientation can be conducted during the interview discussed in the preceding section. If your students enter as a group, they may be oriented as a group. In this instance, we recommend the use of Audio-Visual Aids and demonstrations of actual programs, followed by practice in working with short samples of P.I. Live demonstrations and practice on any machines to be used would also be necessary.

First Use of Programs

When the student begins work in the material(s) first prescribed for him, observe him closely for a few days. Review his responses with him to make sure that he understands the materials and the method of presentation. He may need help in learning to follow directions and to work by himself. Ask him what he thinks about the program, and be guided by what he says. You want to find out if the course is actually right for him. If you decide that it is not, don't delay in changing the prescription. He will get bored with materials which are too easy and frustrated with those which are too difficult, and loss of motivation will occur. The trial and error approach at this point recognizes that test scores and one's own opinions are not infallible. It takes time and increasing familiarity with P.I. materials and the individual's learning behavior to improve the accuracy of prescriptions.

Continued Supervision

Once you feel that the student's prescription is right, relax your supervision but continue to make frequent checks on his progress. Ask him questions about what he is learning, and continue to listen to his opinions about a program. There are four reasons for this checking:

1. Your demonstration of interest and concern is reinforcing to the student.
2. You are continuously evaluating the student's progress.
3. You are still evaluating the accuracy of the prescription.
4. You are getting information about programmed materials which will be invaluable in making future prescriptions.

If the student is keeping a chart of his own progress, check it from time to time. Take advantage of every opportunity to praise him for genuine progress. If you think he should be doing more and better work, try to find out what is impeding his progress.

Some students may not be able to resist the temptation to copy answers from the book rather than to make their own responses to problems and questions. If a student appears to be marking responses, yet doesn't appear to be mastering material, have him respond to several frames at random to see if he is copying. Frequent checks with the student while he is working on a program will help to discourage such misuse of the material.

Evaluation

Evaluation is, of course, a continuous process which begins the moment the student comes under your supervision. You are evaluating the student and his progress when you check on his work, during counseling sessions, in all of your day-to-day contacts with him. Nevertheless, there must be some formal measure of his progress within a particular course and within the entire program.

Unit Tests

There should be a test, your own or the publisher's, with several different forms available for each chapter or unit within a course as well as a final test for the entire course. Also, there should be a policy, with which each student is familiar, that there is a minimum test score which will be considered "passing." We require a score of 85%.

When a student says he is ready to take a unit or final test, these steps are followed:

1. Spot check his written responses to be sure that he has actually worked through the material covered by the test. If it is a machine program, you may have to ask him a few oral questions if time permits.
2. Administer the test
3. Score the test and record results
4. Review test results with the student

Reviewing and Re-testing

If the student does not make the required minimum score on a test, analyze his answers to determine the areas in which incorrect answers were concentrated. Assign review work on the basis of this analysis. Generally, it is better not to require a student to work through a complete program again. Try to find materials which will be new to him for review purposes. When he completes the review, administer a different form of the test he originally took, going through the steps listed in the preceding section.

Continued Study

When a student successfully completes a programmed course, the pretest for the next program on the prescription is administered. As in the original diagnostic process, you want to determine whether he needs the entire course or only parts of it.

It may not be necessary to administer the pretest if the instructor is thoroughly familiar with the program's content, grade level, and method of presentation as well as with the performance, work habits and specific deficiencies of the student. Individual performance often varies with the method of presentation--one student may do well with a machine while another does better with the pencil and paper format, even though programs may have about the same content. When the instructor has observed a student for a time, noting performance and test results, he may decide to advance the student to a new program without giving him a pretest.

As a student continues to advance in his studies, the process of supervision as previously described continues. You may, of course, be able to discontinue close supervision of some students.

Final Evaluation

When students are leaving your program, or at stated intervals throughout the time they are under your supervision, you will need to measure overall progress. For this purpose, administer a different form of the same standardized achievement test which was administered when the students entered your program.

A comparison of the results will give you a measure of the student's overall progress; that is, you will know if the instructional program succeeded in raising his grade level. It will also give you feedback about the merit of the programmed materials your students have used and the accuracy of your prescriptions.

Frequent administration of the standardized achievement test is not advisable. As a rule of thumb, we recommend intervals of at least four to six months between tests.

Students may want to take the tests frequently to check on their own progress, but such intermediate measurement had best be left to scores on final tests and to counseling. Since significant grade level gain takes time, the results of too-frequently administered achievement tests may prove disappointing to the student. Furthermore, you run the risk that students will become "test-wise"--that is, improved scores will reflect familiarity with the test rather than increased knowledge. You also run the risk that students will swap and pass on information about test answers.

CHAPTER VI

EVALUATION AND SELECTION OF PROGRAMMED INSTRUCTION

Evaluation and selection of programmed materials go on continuously. The ultimate test of any program comes in its use with your students. However, there must be some other evaluation in order to determine what programs will be purchased--to decide which ones are to receive the ultimate test.

Sources of Information

There are several sources from which information on programmed instruction can be obtained. We recommend the purchase of one of the several bibliographies which are now commercially available. We have used the Automated Education Handbook[1] and the Hendershot Catalog.[2] As do other references, these bibliographies list programs by subject matter. They also contain information about grade level, price and publisher. Be sure that the bibliography you buy has an updating service.

As you learn of companies which publish P.I., ask to be added to their mailing lists for announcements of new publications so that you will learn of new programs as soon as they are published.

To acquire programs to evaluate, peruse your bibliography and order examination copies of programs which appear to cover the desired subject matter at the appropriate level.

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1. Automated Education Handbook: Frank, H. Gille, Publisher, Edith Harwith Goodmen, Editor; Automated Education Center, P. O. Box 2658, Detroit, Michigan 48231

2. Programmed Learning: A Bibliography of Programs and Presentation Devices: compiled by Dr. Carl Hendershot, 4114 Ridgewood Drive, Bay City, Michigan 48707

Behavioral Objectives

Before you review examination copies of programs, formulate, in writing, the training objectives you plan to achieve with a particular program. The objectives should be stated in behavioral terms; that is, they should state what a student should be able to do when he completes a course, and they should define the acceptable level of preformance. A statement that a student will be able to work long division problems is not enough. A better objective would be: Given 50 problems in long division the student will be able to set up and solve at least 45 of them. Preparation of "behavioral objectives" is sound teaching practice regardless of the method of instruction. Preparation of such objectives is essential when one begins to screen programmed materials for possible use. You use them to select P.I. materials which have approximately the same behavioral objectives as your own.

Preliminary Screening

The training objectives you have formulated will serve as a preliminary screening device. All good programs have definite objectives stated in the same terms as your own--in terms of performance--what the student will be able to do upon completion of the program. If your objectives and those of the program seem to coincide, further examination is called for.

Next, check to see if a teacher's manual, a pretest, unit tests, and final tests are furnished. The absence of these documents does not mean you should discard the program, but it does mean you will have to construct tests yourself. If tests are furnished, examine them to determine if they actually measure the performance the objectives call for.

The teacher's guide or other literature accompanying the program should furnish research evidence. (Beware of the program which lacks such data.) This information should describe the population for whom the program was designed. It should tell you how the program was tried out by the author and/or publisher. It should state who the students were, how the program was used, conditions of testing, and what results were obtained. That is, pre- and posttest scores should be furnished along with copies of the tests. It should tell you how long the tryout students took to complete the program. The attitude of the student towards the program and the method of ascertaining his attitude should be reported. The tryout population should be representative of the target population. Both groups should have some similarity to your students.

Programs which still look promising after the preliminary screening are now ready to be subjected to a searching, critical inspection.

Inspecting the Program

You can best accomplish inspection by going through the program as a student. If you are not familiar with programmed instruction, a warning is in order. In the Automated Handbook Paul I. Jacobs states it this way: "The way the subject matter is organized and presented in a program is likely to surprise you. The order in which topics are covered may be strikingly different from other presentations of the 'same' subject matter that you have seen in textbooks. The steps the student takes to master a given topic may seem too small or repetitious. Think twice before rejecting the program on these grounds alone. It may be just these features that make the program uniquely effective."

As you work through the program, consider its content, construction, and level of difficulty.

Content. Your consideration of content should give you the answers to the following questions.

Does the program actually cover the topic you plan to teach?

What skills does the program develop?

Are these the skills you want your students to develop?

> For example, a program may teach a student to quote rules for the use of the comma. Is this what you want your students to be able to do, or do you want them to be able to use commas correctly?

Is the program in line with the prescribed course of study?

Is what the program teaches in agreement with what "authorities" in the field teach? (If you aren't sure, get the opinion of an expert, and check the author's qualifications and those of any consultants he lists as subject matter experts.)

Construction. The second feature you will be considering as you work through the program is its construction and fabrication, that is, the way it is put together. Format or construction may significantly add to or subtract from the effectiveness and applicability of a program. Points you will want to consider follow.

Is the program divided into distinct units or segments?

> If there are logical divisions, you can use parts of a program more readily. A particular deficiency may be limited in nature and, therefore, only certain parts of a programmed course may be required.

Can the program be used with ease?

> The sheer mechanics of a program can make it frustrating. The physical negotiations required (turning pages in an unorthodox manner, inverting the programmed text, etc.) often presuppose more ability than does the subject matter of the program.

Can the student confirm his responses easily?

> A student should not have to expend undue effort to check his answers; yet it shouldn't be easy for him just to copy correct responses.

Are the directions easy to follow?

Does the program require special equipment? (If so, will such special equipment be available to you? Will there be enough of it for all of your students?)

Is the program consumable or reusable?

> It isn't necessarily desirable to reuse a program; your instructional materials budget will dictate the necessity. Be aware, however, that the effectiveness of some programs would be altered significantly if students are not allowed to respond in the program itself. For other programs, having students to write responses on notebook paper will not change the program's effectiveness. Suppose, for example, the program dealt with graphs. If the student were asked to read a graph, he could respond on notebook paper. If, however, he were asked to complete a graph he would need to respond in the program.
>
> Some programs require students to make mental responses rather than to record them. These programs may teach as well as others, but, in general, we recommend that the student be required to make overt responses. Programs in which an overt response is required seem to hold the student's attention better, and they make it possible for you to check his understanding before a test is given.

Level. The third factor in evaluating a program is determining its level of difficulty. This determination must be more precise than simply asking "Does Course X teach English grammar at the seventh grade level?" Remember, your needs are determined by your behavioral objectives; you are looking for program content that will meet these specific objectives. In this context, the term "grade level" may not be meaningful. What is important is the reading level of the material. In many cases, programs call for reading skills which are at a much higher level than the subject matter content. Try to find the answers to these questions:

Is the program written in a style and with a vocabulary your students can understand? (It's probably better to err on the side of too low a level than one that is too high.)

If there is technical terminology, are your students familiar with it? Or is it taught by the program?

What are the prerequisites for the course?

> In an otherwise sound P.I. lesson, disregard for the prerequisite skills may render it totally ineffective. If the target population does not have the prerequisites, remedial material must be prescribed. If the deficiencies are great, one might need to reassess his target population.

Trying the Program out

Programs which have survived your inspection are now ready to be tried out. Administer the program to a small group and carefully observe their performance as they work. Administer pre- and posttests, your own or the publishers, so that you will have a measure of how well the program taught. The results--test scores and your own observations--should now enable you to decide if a program is suitable for your purposes.

If Tryout Isn't Possible

Sometimes it may not be possible to try a program out. Suppose you want to teach an entire course with programmed materials. The ideal way to determine the program's merit would be to administer it to a class, using as a control group a class being taught by conventional methods. Your two groups would be administered the same pre- and posttests. The results would tell you if your program is at least as good as conventional teaching. In a public school system this just isn't practical. You run the risk that the program does not teach as well, and you then have a group of students who have been short-changed for a semester or a year. This is the place where you must rely on the experience of others. It's better not to rely on the judgment of someone who has inspected a program and written a review. If at all possible, find out what someone who has actually used the program thinks of it.

Your Own Bibliography

As you screen, inspect, and try out programs, begin to compile your own annotated bibliography. We recommend a looseleaf binder which has at least one full page for every program. In the beginning, put down all the information you have been able to gather about a program. After you have used programs, go back to the bibliography and add information about your results, suggestions for further use, etc. Such a document can save you many hours of time and labor in the future.

About Purchasing

If all students in one room are using P.I., no two of them need be studying the same subject. Hence, it is not always necessary to buy programs on a one-course-for-one-student basis. Schedules can be arranged so that a large number of students can use a small number of copies of a program. Too, some programs fill more than one volume. Where students have varied levels of achievement, as many students as there are volumes may use the same copy (set) of a program at the same time. Such possibilities assume great importance for the manager with a limited budget.

Summary

Evaluation of programmed instruction involves inspection, review of research evidence, tryout, and the opinions of others. It should be remembered at all times that no instructional material is intrinsically valuable. It must be considered in the context of target population, adaptability to curriculum, time, motivational characteristics, measurable outcomes, and budget.

CHAPTER VII

COUNSELING

> Gathering and imparting of information can often be accomplished mechanically but the business of helping people discover the personal meaning of information for them still requires a human interrelationship. This is the very heart of teaching, its reason for being.*

That counseling plays an important role in our system for using programmed instruction is doubtless apparent throughout the preceding sections of this manual. To avoid misinterpretation, it should be stated at once that our references to the learning manager as counselor are not intended to imply that a professionally trained counseling staff is unnecessary in an educational program. Nor is there any implication that we have found a way to train counselors overnight. We employ professionally trained counselors; our casting the manager in this role evolved because we could not employ enough professionals to do the whole job. We provided as much training as possible for the managers and arranged for them to have ready access to the counselors for consultation and guidance.

Although our approach was dictated by necessity, the results were such that it is tempting to assert that foresight and wisdom brought it about. Learning efficiency increased and the overall counseling process improved beyond our expectations.

The Problem

There were three major factors which contributed to the necessity to expand our counseling services. First, our students probably need more counseling than most. They are a multi-problemed lot, and their isolation from society compounds their inability to solve their own problems. We soon learned that counselors would have to provide more direct service than is usual in a counseling situation. Furthermore, our trainees lacked purpose, a sense of direction, and a belief that their problems could be solved.

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*Combs, Arthur W. and Snygg, Donald. Individual Behavior. New York: Harper Brothers, 1959, p. 384.

The second factor had to do with the instructors. (We have reverted to the use of "instructor" because we are now talking about our vocational instructors as well as the managers of our basic and remedial education classes.) Only one of our instructors was a professionally trained teacher. Thus, as a group, they lacked the awareness of the nature and role of counseling which formal teacher training would have given them. Their early reluctance to refer trainees for counseling reversed itself, and the instructors became all too-ready to refer in the expectation that problems they were encountering in the classroom would be solved in the counselor's office.

The third factor was directly related to the first two. The counselors were soon almost inundated by the demand for their services. There were too many students, too few counselors, and too little time for a meaningful counseling relationship to develop. We were at the point of an impasse.

The Solution

We decided that our best hope for solving this problem would be to capitalize on the daily relationship of the trainee and the instructor. In other words, the instructor would become involved in the counseling process. At first, the instructors were apprehensive of their new role. As one instructor put it, "It's much easier just to send him to the counselor." They were, however, willing to spend their lunch hours and time after working hours in training which would help to overcome their apprehension and improve their skills.

The clinical psychologist who serves as consultant to the project conducted several sessions with the whole staff to teach them how each could involve himself in the counseling process. Learning theory, personality development and student characteristics were discussed at length. There were role-playing sessions involving instructors, counselors and other staff members. All of the training sessions were built around actual experiences which the instructors recounted. The psychologist also helped the staff to realize that they must be able to recognize when a trainee should be referred to a trained counselor. The instructors were assured that they would be backstopped by the professional counseling staff.

The Results

The results have been gratifying. The relationship which develops between instructor and trainee enables each to function better. The trainee, receiving support and help when he needs it, has fewer learning difficulties. The instructor, armed with more understanding of the trainee and his problems, is not so ready to write him off by categorizing him as "mean," "stubborn," "lazy" or "indifferent." Thus, he is better able to help the trainee overcome the learning difficulties which do arise and to prescribe and manage the learning activities which will advance him toward his goals. The training has also stood the instructional staff in good stead in coping with the continuous problem of motivating the trainee to achieve.

The counseling staff was freed to work with trainees who had severe problems and to provide the services which are not usually a part of the counselor's job but which must be provided for trainees who are prison inmates.

The Instructor as Counselor

In the main, the instructors functioned as educational counselors. They interpreted test scores to trainees, helped them to set educational goals, both long and short range, and assisted them to explore and select the routes by which the goals could be achieved.

By and large, the solution of personal problems remained the domain of the counselor. However, the instructors, having come to realize that personal problems limit learning efficiency, gave service in this area, too. They found themselves willing to listen to the trainees talk about their problems. Three things happened when the instructors began to listen and to encourage the trainees to talk: They found that the opportunity to ventilate was sometimes all that a trainee needed; they found that instructor and trainee together could solve some problems; and they found that they were better able to discern when a student actually needed professional help.

As counseling crossed departmental lines, the working relationship between instructor and counselor became closer, and there was more interchange of information and experiences. Working together, both counselor and instructor were much more effective than they were working alone. The partnership which developed paid off for trainee, instructor, and counselor alike.

CHAPTER VIII

MOTIVATION

Motivation of the student is one of the most important functions and one of the most difficult problems of any teacher. It should be as carefully planned for and managed as any other aspect of the learning situation. The most careful and brilliant planning and execution with regard to course content, scheduling, teaching method, testing, etc. may come to naught if this critical element of instruction is forgotten or ignored.

Too often, it seems, there is conflict between measures which are adopted for the preservation of discipline and the measures which are employed to achieve motivation. Aversive controls--threats, orders, exhortations, ridicule, outright punishment--can be effectively applied to maintain orderly classrooms and conformity to rules and regulations. Unfortunately, these controls can be equally effective in extinguishing desirable learning behavior.

Motivation is goal-directed behavior. That is, the organism's (person's) activities are geared to producing a specific result which the organism perceives as desirable. (The motivation may be conscious or unconscious.) Ideally, then, in the educational setting, the learner's activities--his learning behaviors--are directed toward achieving a goal *which is desirable to him*. You will note that this is the ideal. In reality, we sometimes ignore this concept that the most efficient learning behavior occurs when it moves the learner toward something *he* wants--be it earning a high school diploma or learning to deal from the bottom of the deck, i.e., without regard to its social acceptability. That is, the result of the behavior is rewarding to the learner. In the parlance of behavioral science, behavior is shaped by its consequences. If the results of behavior are rewarding (reinforcing) to the organism, it tends to repeat the behavior. By the same token, if the results are unpleasant or punishing, it tends to avoid the behavior.

This theory that behavior is strengthened or weakened by its consequences has critical implications for educators. It is the theory upon which programmed instruction is based, and it is the theory upon which our method of using programmed instruction is based. However, before we discuss the specific application of reinforcement theory in the use of P.I., there are some other aspects of motivation which merit attention.

Learning Atmosphere

The learning atmosphere should be as pleasant as it is possible to make it. Such an atmosphere begins with a friendly, accepting, encouraging staff. Motivation is not a cold, diagnostic and prescriptive process of arranging learning contingencies or of making precise analyses of objects and events that are reinforcing for each learner. Basic to all motivation is a genuine interpersonal relationship with another human being.

The physical facilities should be decent and comfortable--from the kind of toilet facilities you expect for yourself to good lighting, heating, ventilation, comfortable seating, etc. We recommend the use of individual carrels so constructed and placed that students are separated, yet do not feel hemmed in.

Actually, what we are saying is that one should control or eliminate anything which may compete or interfere with learning. To this end, we make further recommendations as follows:

1. Provide orientation that precisely explains expectancies, purposes, rules, and procedures in simple, clear language.

2. Have as few rules as possible. Make sure that such rules as are necessary are applied consistently and fairly.

3. Avoid the use of negative signs, posters, directives or orders whether written or oral.

4. Respect the learners' feelings. For example, we called our students "trainees" after we learned that they felt that "student" impugned their maturity.

After due care has been given to creating an atmosphere which fosters learning, attention should be directed to the aims of the students.

The Importance of Goals

You will recall that we defined motivation as goal-directed behavior. The student's learning activities must be planned around his own goals, and he must be helped to see how these activities advance him toward achievement of his goals. If possible, relate the activities to the goals in a practical, dollars and cents way. For example, the novice sign painter who is studying grammar should know that signs which have misplaced apostrophes or misspelled words will have to be painted over. The student barber who is studying arithmetic will recognize that errors in making change can cost him money, customers or both.

A student may not have goals, or those he has may not be realistic in the light of his ability, attitudes, and opportunities for further study. In such a case, considerable patient endeavor should be exerted to help him set or reset goals. This effort should utilize all existing information about the student. The goals can be simply stated; for example, a young child may have as his goal "to get promoted." For the older student, it may be to earn a high school diploma, to prepare for college entrance, or to prepare for a vocation. Whatever the professed goal, treat it with respect, and don't try to impose your own goals.

If the goal is long-range, help the student to set intermediate goals so he will be able to see that he is making progress. For example, suppose you have a student who wants to earn a certificate of high school equivalency. His intermediate goals can be to successfully complete specified units of study which will qualify him to take the GED Tests.

At this point, it must be recognized that such general reinforcers as the "joy of achievement" and the knowledge that one is making progress toward a goal are not always enough to sustain learning behavior. There must be frequent judicious application of more specific reinforcers. Fortunately, such application is easily achieved with P.I.

Programmed Instruction

Good P.I. materials are so constructed that it is difficult if not impossible for the learner to fail. He can answer correctly the questions posed as part of the programmed material, and he finds out almost immediately that he has answered correctly. The pleasure of being correct reinforces the behavior--learning--which was rewarded with the feeling of pleasure. This immediacy of feedback is one of the most important features of programmed instruction. The student can assess his progress at every step along the way. Learning theory is quite insistent that the learner, whether he be human or animal, must have feedback on his performance. It is one of the best reinforcers we know, particularly if it immediately follows the desired behavior.

P.I. and Other Motivators

Programmed instruction lends itself to the use of other positive means of motivation. It is fortunate that P.I. has this characteristic, since its intrinsic motivating capacity probably loses some of its power and will not, of itself, sustain the performance rate which is necessary to solid educational achievement.

We have been able to get students in our Manpower Development and Training Project to increase their productivity by paying them for points earned by completing programmed instruction. A point value was assigned to each programmed course we use on the basis of its length and difficulty, and the monetary value of the points was established. A student could then earn money according to his own productivity. He was not, however, paid for merely completing frames. He had to pass unit and/or final examinations in a course in order to earn points.

Such a plan offers some flexibility in delivering reinforcement. For example, students may be paid once a week for all points earned in that week; or they may be paid whenever they have accumulated a certain number of points; or payment for points earned in one course may be made contingent upon earning points in another course. The instructor can schedule reinforcement and vary the schedule as he sees the need.

Specific Reinforcers

A plan such as that just described makes use of one of the most powerful of all reinforcers--money, which is influential with nonprisoners as well as prisoners. The offender is not motivated by the thirst for knowledge--certainly not at first--but money is very attractive, and he will work for it. At the same time, it should have response contingencies. In other words, the learner should receive money only after he has delivered specific production that meets a criterion established by the educational system.

Money is clean-cut and tangible, and it can be applied specifically to a particular set of response contingencies. However, it should be used sparingly and only rarely for time-interval behavior--not pay by the hour, for example.

Other specific reinforcers we have tried include such things as food (which can be messy!), early dismissal from class, and special privileges such as making or receiving telephone calls. Actually, specific reinforcers are limited only by the budget, the flexibility of the system, and the ingenuity of the person delivering reinforcement. The point to remember here, as elsewhere, is that the recipient must perceive the reinforcer as rewarding. Time spent in discovering what is reinforcing for each student is time well spent.

An Experiment in Contingency Management

At Draper, we conducted an experiment in Contingency Management in which we attempted to discover reinforcers which would increase efficiency in learning by prisoners. Sixteen students served in the experiment, which ran for a period of nine weeks. The amount of programmed instructional work to be done by each student was specified daily by means of a "performance contract." Although the amount was negotiable, the conditions of the experiment required each learner to increase his performance about 20 percent each week over a baseline measure taken during a three-week period just prior to the beginning of the experiment.

A "reinforcing event" (RE) was scheduled after completion of a specified part of the contract, so that throughout a single day it was possible to accumulate six break periods of 15 minutes each during which an RE could be taken by the student-subject.

The RE's occurred in a special recreation room set aside for the purpose. They included coffee, magazines, games, the opportunity to type a personal letter, etc. Each day the students chose from an "RE Menu." The theory underlying the use of the RE is rooted in the learning principle that whenever a less pleasant activity is immediately followed by a rewarding activity, the latter will reinforce the former. In the practical terms of our contingency management experiment, if learning English grammar is dull or boring to a student, it will become less so when immediately followed by a trip to the RE room.

The results of the experiment showed that under the conditions of contingency management, productivity, as measured by frame output, almost quadrupled. Other results are worthy of note. Number of tests taken doubled; percent of tests passed increased from 71 percent to 80 percent.

Conclusion

Motivation--goal-directed behavior--must be managed systematically for best results. Since motivation is produced by reinforcement, the more frequently the learner receives reinforcement, the greater the motivation to work. By careful control and management of learning contingencies--stimulus controls, reinforcement and response contingencies--educational achievement can be significantly increased.

CHAPTER IX

THE TEACHER AS LEARNING MANAGER

Management is defined as the "executive function of planning, organizing, coordinating, directing, controlling and supervising any industrial or business project or activity with responsibility for results." (Webster's Third New International Dictionary, Unabridged.) Substitute "learning" for "industrial or business" and the definition serves to describe the function of the teacher who has delegated his traditional task of instructing to programmed instruction. Any teacher, regardless of instructional method, has the responsibilities enumerated in the definition. The teacher who does the actual instruction, however, because of the magnitude of that task, is robbed of sufficient time to devote to these other aspects of his job.

Although the learning manager gains time, his work is no less difficult, demanding, and time-consuming; it only has a different slant. He is better able to discharge the "responsibility for results" for each of the students whose education should be furthered by his efforts.

The successful learning manager has some special qualifications. If he does not bring them to his task, pre-service and in-service training must be provided to help him acquire them. One essential qualification cannot, however, be provided altogether by training: Aside from experience, there is probably no way to gain the belief in the value of P.I. as an instructional method which is necessary to its most effective use. (Of course, an understanding of the principles on which P.I. is grounded is helpful.)

The same motivational principles which apply to the learner apply to the manager. He must receive reinforcement for his efforts. His success is measured in terms of his students' success. When his students succeed with P.I. he is accounted successful, and "Nothing succeeds like success." The more success experience the manager has with P.I., the more he will believe in it, and the more he will want to use it. The teacher who is to turn learning manager must, therefore, begin using P.I. with an open mind and a willingness to be convinced.

Among the qualifications which a manager may be helped to acquire are skills in counseling and in motivating. Here, too, experience is a valuable teacher, but the experience should be preceded and accompanied by some training in the principles and techniques to be applied. Chapter VII briefly described one way in which we have provided training in counseling for our instructors. We recommend that such training be continuous, and that it include sessions on interviewing--not only the art of questioning, but also the art of listening.

Similar training sessions on motivating have been conducted. One very beneficial experience for our own managers came through conducting a small controlled experiment in contingency management. Our purpose here, however, is to underscore the necessity for providing continuous training for managers, not to attempt to tell anyone how to provide such training.

Our purpose, too, is to state what has only been implied so far: To succeed the manager must work in an atmosphere which gives him the freedom to exercise his creativity and flexibility and which provides the same kind of support and reinforcement he is expected to provide for his students.

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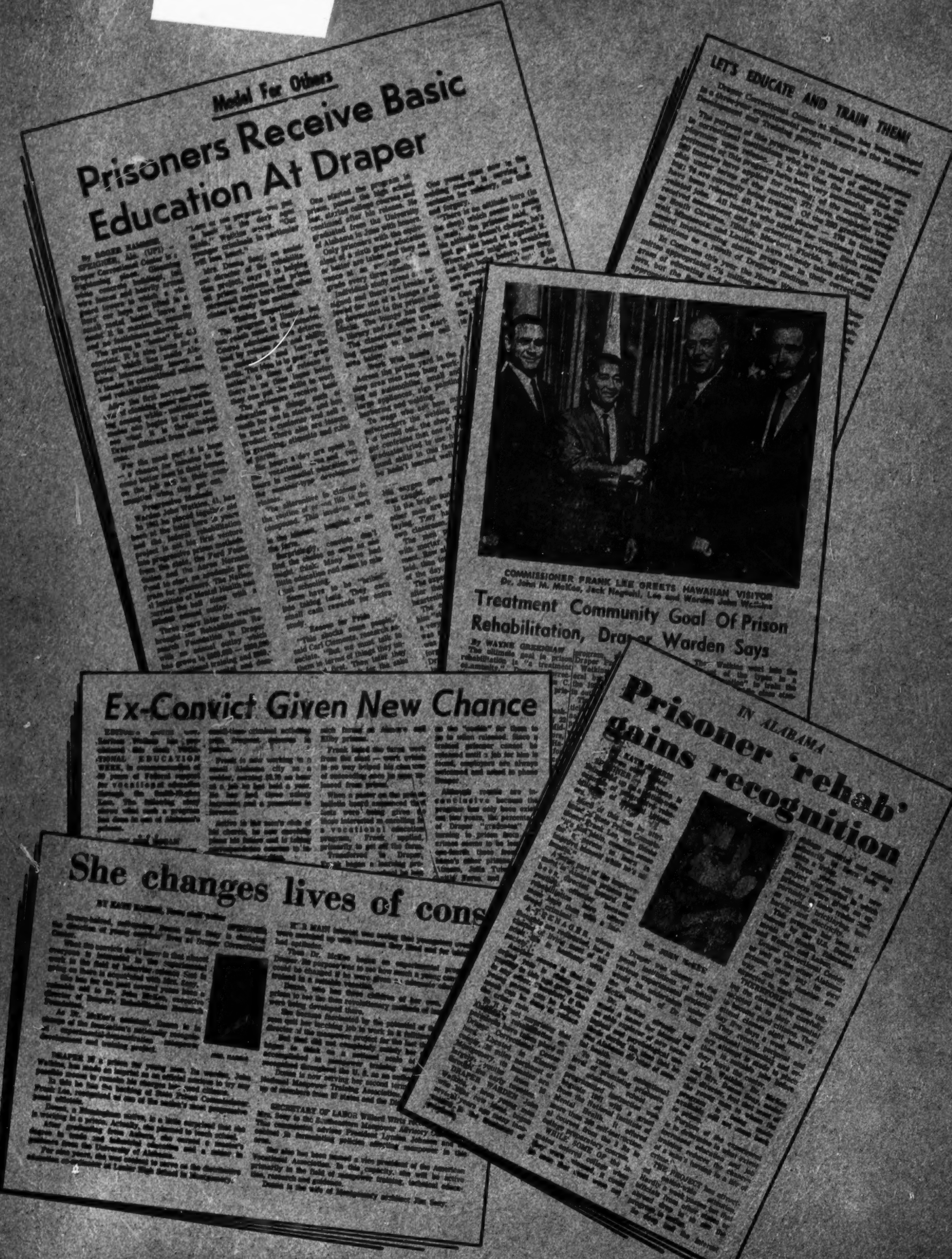
Appendix A of this volume of the final report, a monograph which describes "The Roles of the Teacher for the Effective Use of P.I. in a Correctional Setting," presents a detailed account of learning management experiences in the Draper MDT E&D Project.



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By WAYNE GREENHAW

Ex-Convict Given New Chance

IN ALABAMA

Prisoner 'rehab' gains recognition

She changes lives of cons